

# EV-C4N **RMT-V124A**

# SERVICE MANUAL

US Model Canadian Model PX Model





Video 8 U' MECHANISM

Remote commander is available as a unit, See page 95 for repair parts.

> For MECHANICAL ADJUSTMENT, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL III (U MECHANISM)" (9-972-732-11).

#### **SPECIFICATIONS**

**System** 

Video recording system

Rotary two-head helical scanning FM system

Audio recording

Rotary head, monaural system

Video signal NTSC color, EIA standards

Usable cassette 8 mm video format cassettes

Tape speed SP: approx. 1.43 cm/sec.

LP: approx. 0.72 cm/sec.

Maximum recording time

SP: 2 hours 30 minutes

LP: 5 hours

(with Sony P6-150)

Fast-forward and rewind time

Approx. 4 minutes (with Sony P6-120 cassette)

VHF/UHF output

Channel 3 or 4 (selectable)

75 ohms, unbalanced

VHF/UHF input

75 ohms, F-type connector for VHF/UHF IN

#### Inputs and outputs

Video input LINE IN VIDEO (phono jack) (1)

Input signal: 1 Vp-p, 75 ohms, unbalanced,

sync negative

Video output LINE OUT VIDEO (phono jack) (1)

Output signal: 1 Vp-p, 75 ohms, unbalanced,

sync negative



Audio input LINE IN AUDIO (phono jack) (1)

Input level: -7.5 dBs

Input impedance: more than 47 kilohms

Audio output LINE OUT AUDIO (phono jack) (1) Standard impedance: -7.5 dBs at load impedance

47 kilohms

Output impedance: less than 10 kilohms

CONTROL S IN Minijack

CONTROL L Stereo mini-mini jack

#### General

Power requirements 120 V AC, 60 Hz (US, Canadian) 110 V-220V AC 50/60Hz (PX)

Power consumption 10 W (max.)

Operating temperature 5°C to 40°C (41°F to 104°F)

Storage temperature -20°C to 60°C (-4°F to +140°F)

Approx. 225 x 75 x 252 mm (w/h/d) Dimensions

Approx. 8 7/8 x 3 x 10 inch

Weight Approx. 2.1 kg (4 lb 10 oz)

#### Remote Commander RMT-V124A

Remote control system Infrared control

Command mode VTR2

Power requirements 3V DC

2 size AA batteries (IEC designation R6)

- continued on next page -



# Supplied accessories

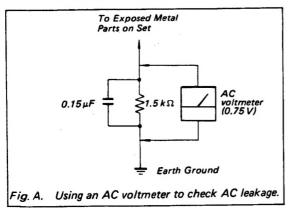
- Remote Commander RMT-V124A (1)
  Size AA (R6) batteries (2)
  External antenna connector (1)
  75-ohm coaxial cable with F-type connectors (1)
  AC power cord (1)

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### SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

- Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
- Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
- Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
- Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
- Check the line cord for cracks and abrasion.
   Recommend the replacement of any such line cord to the customer.
- Check the B+ voltage to see it is at the values specified.
- Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.



#### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

- A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments
- A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
- 3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK A OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

#### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE A SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

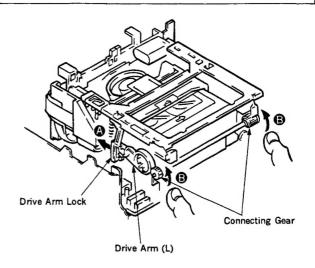
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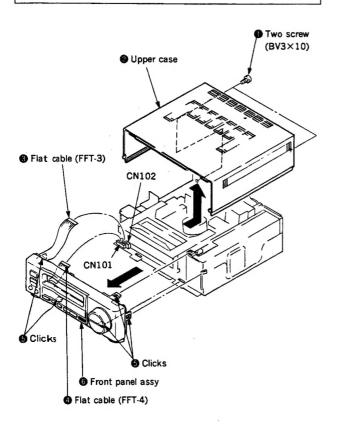
# SECTION 1 SERVICE NOTE

# 1-1. REMOVAL OF CASSETTE AT FAILURE WITH CASSETTE INSERTED

- A If tape is wounded on the drum and it cannot be removed: Rotate the capstan motor wheel in either direction and rotate the S or R reel to house the tape. Then, perform Procedure B.
- B If tape is housed in the cassette half and cannot be removed:
  - Remove the MD block. (For removal, refer to Section 3-3.)
  - ② Release the drive arm lock from the drive arm (L) located between the L frame and the left side of the cassette controller in the arrow direction (A).
  - 3 Rotate the connecting gear in the arrow direction (9) with both the thumbs.

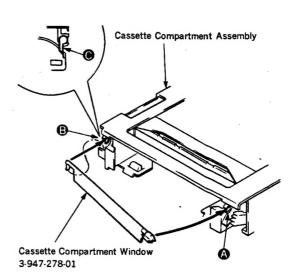


### 1-2. REPLACEMENT OF EXTERNAL PARTS



# 1-3. REPLACEMENT OF CASSETTE DOOR ASSEMBLY

- 1) Remove the front panel.
- 2) First undo (A) portion toward you and then undo (B).



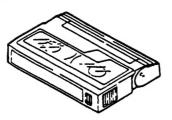
3) When installing, as shown above, first put in **3** portion by setting the claw **6**. Then, put in **4** portion and install so that the door hangs almost vertically.

# 1-4. CLEANING OF VIDEO HEAD AND RUN SYSTEM

#### Method 1

(Cleaning Method with Cleaning Tape)

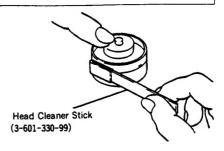
 A cleaning cassette should be used.
 (When using, the attached manual for the cleaning cassette should be thoroughly read.)



#### Method 2

(Cleaning Method with Cleaning Liquid)

- ①Remove the upper case of the video deck.
- ②Apply cleaning liquid to a head cleaner stick.
- ③As shown in the right figure, press the head cleaner stick lightly. Turn the rubber of the rotary upper drum gradually and clean the video deck.



(Cleaning Method for Run System)

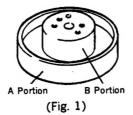
- ①Apply cleaning liquid to a head cleaner stick.
- ②Clean the guides which tape touches directly and the pinch roller with the head cleaner.

### 1-5. REPLACEMENT OF UPPER ROTARY DRUM

#### Method 3

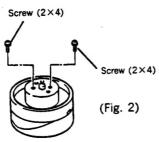
#### Caution

- Particular care must be taken when handling the video head and the terminals
- When handling the rotary upper drum, do not touch the side (A portion) and hold the top (B portion) (See Fig. 1)

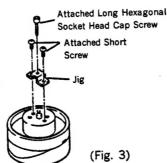


#### Removal of Rotary Upper Drum

①Remove two screws (2×4) (See Fig. 2).

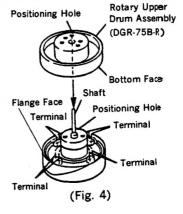


②Fix the jig (supplied with the spare rotary upper drum) with the two attached short screws. Then, put the attached long screw into the jig until the rotary upper drum may be removed (See Fig. 3).

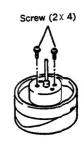


### Installation of New Rotary Upper drum

- ①Clean the flange face and the bottom face of the new rotary upper drum (See Fig. 4).
- ②Insert the shaft attached to the jig into the positioning hole in the lower drum. Then, put the shaft through the positioning hole in the new rotary upper drum and set the drum lightly.



- ③With the shaft inserted into the positioning hole, push into the upper drum lightly with a hand. If the drum is not allowed to be bottomed, alternately tighten two screws (2×4) gradually and install the drum (See Fig. 5)
- Pull out the shaft inserted. If the shaft is not allowed to be withdrawn smoothly, go back to Step ② and redo the procedure.



(Fig. 5)

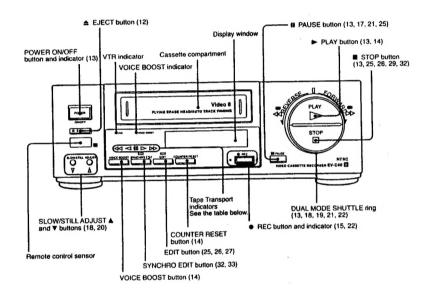
⑤Once the drum has been replaced, clean the video head and the run system with a head cleaner stick (See "Cleaning Method 2 for Video Head and Run System).

# **SECTION 2 GENERAL**

# **Identifying the Parts and Controls**

### **Front Panel**

The function of each control is explained on the page indicated in parentheses ( ).

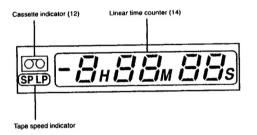


44	Rewind	DD	Fast forward
<b>⊲ 00</b>	Play pause (reverse)	00 >	Play pause (forward)
<b>4</b> 4 D	Picture search (reverse)  Locked picture search (reverse)	D DD	Picture search (forward)  Locked picture search (forward)
٥.	x 2 (double speed) playback (reverse) Play (reverse) Slow motion play (revrse)	D	x 2 (double speed) playback (forward Play (forward) Slow motion play (forward)
<b>√-80</b>	Frame-by-frame picture (reverse)	-00-5	Frame-by-frame picture (forward)
44-0-	Auto play		

# This section is extracted from instruction manual.

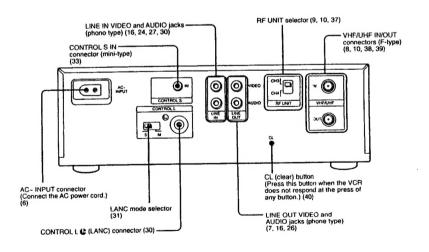
# **Display Window**

Each indicator is explained on the page indicated in parentheses ( ).



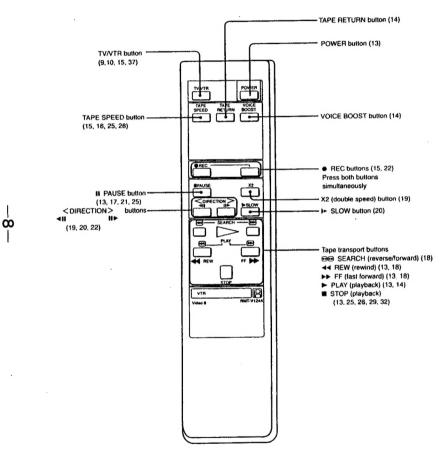
### **Rear Panel**

The function of each control is explained on the page indicated in parentheses ( ).



# **Remote Commander**

The function of each control is explained on the page indicated in parentheses ( ).



# **Features**

#### Editing

- . DUAL MODE SHUTTLE ring
- Allows quick access to the desired scene and playback at various speeds in both forward and reverse directions.
- · Synchronized editing
- Controls two VCRs (recording VCR and playback VCR) connected with either control L ( & LANC) or control S connection at a press of one button.
- . Control L & (LANC) connector
- Allows connection with other video equipment such as a camcorder easily controlling tape transportation. Furthermore, simultaneous control of both equipment is available for bi-directional synchronized editing.
- CONTROL S INPUT connector
- Allows remote control of this VCR by other Sony video equipment with a CONTROL S OUTPUT jack.

#### **Function**

#### Voice boost function

When playing back a tape recorded with a video camera recorder (camcorder), voice boost enhances the voice portion of the sound and reduces unwanted background noise like wind so that it's easier to listen to conversation.

#### Note

#### No TV or cable reception

Since no tuner is built in this VCR, you cannot record a TV or cable program through the RF (VHF/UHF IN and OUT) connection.

#### How to Use This Manual

This manual is divided into the following six chapters: Chapter 1 Introduction, Chapter 2 Preparation, Chapter 3 Basic Operations, Chapter 4 Advanced Operations, Chapter 5 Editing, and Chapter 6 Additional Information. If you are already familiar with basic operations, skip Chapter 3 Basic Operations and see Chapter 4 Advanced Operations.

If you have any problems in installing or operating the EV-C40, refer to the troubleshooting section (see page 40) first before calling your local Sony dealer.

#### When you are reading through the manual, remember:

- . Buttons and switches on the VCR to be used in operating the VCR are called out and shown in uppercase letters in the illustrations.
- . Buttons and switches on the Remote Commander to be used for operating the VCR are called out and enlarged in the illustrations.

#### Conventions

This indicates a function operated only with the buttons on the VCR itself, but not with those on the Remote

This indicates a function operated only with the buttons on the Remote Commander, but not with those on the VCR

#### Unpacking

Unpack all the items and check to confirm that you have everything listed below.

- Remote Commander RMT-V124A (1)
- . Size AA (R6) batteries (2)
- External antenna connector (1)
- · 75-ohm coaxial cable with F-type connectors (1)
- AC power cord (1)

# **Synchronized Editing**

If your other VCR has a control L ( & LANC) connector, you can take advantage of a feature called "Synchronized Editing" that controls both VCRs (recording VCR and playback VCR), and releases the pause when SYNCHRO EDIT is pressed. To use this function, you must connect a designated control cable (control L or S cable) in addition to the connections of the audio and video cables.

There are two types of control cables: control L. (LANC) cable and control S cable depending on the type of connectors of the VCRs.

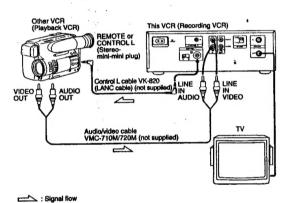
# Connecting Video Equipment with the LANC Connector

#### Notes

- When connecting two VCRs, do not connect them so that both VCRs are used as a recording VCR and a playback VCR simultaneously. Doing so may cause a humming noise.
- · If your playback VCR is a stereo unit, make connections using the VCM- 910MS/920MS cable (not supplied).
- . If another VCR has both the LANC connector and the CONTROL S connector, use the LANC connector. Do not make the CONTROL L and CONTROL S connections simultaneously.

About the &(LANC) LANC stands for Local Application Control System. The LANC connector is used for

controlling the tape transport of video equipment and peripherals connected to it. This connector has the same function as the connectors indicated as CONTROL L or REMOTE on other equipment.

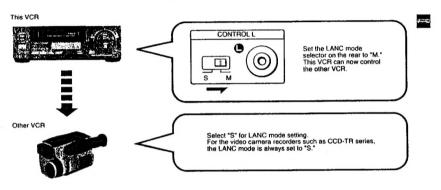


# Setting the LANC Mode

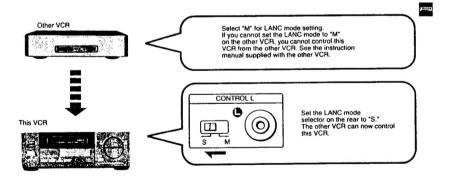
When you perform synchronized editing using the control L (LANC) cable, remember to set the LANC mode as described below:

Be sure this setting is correct before you begin editing, since it decides which VCR

#### When you want to control the other VCR from this **VCR**



#### When you want to control this VCR from the other VCR



Do not make the CONTROL L connection between this VCR and the other VCR with the LANC mode settings of both VCRs set to the same



· Check the LANC mode setting (see page 31).

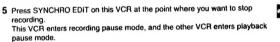




This VCR

#### Operation

- 2 Locate the recording start point on this VCR and put this VCR in recording pause
- 3 Locate the beginning of the scene to be edited out on the other VCR and put the other VCR in playback pause mode.
- 4 Press SYNCHRO EDIT on this VCR. The SYNCHRO EDIT indicator lights up. Pause mode of both the recording VCR and the playback VCR is released



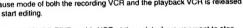
- 6 If you have another scene you want to edit, repeat steps 3 to 5.
- 7 After editing has been completed, press STOP on both VCRs.

To make use of the linear counter "0H00M00S" (zero) for synchronized editing You can perform synchronized insert editing only when this VCR is used as the

editing, the other (playback) VCR enters playback pause mode and this VCR enters

See the instructions on page 29 for operation. Follow the operation procedures 1, 2 and 3 on page 29. To start editing, press SYNCHRO EDIT on this VCR. When the linear counter becomes zero, the other VCR enters playback pause mode and this VCR enters recording pause mode.

- 1 Insert a recorded cassette into the other (playback) VCR and a cassette for recording into this (recording) VCR.





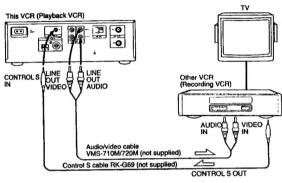
# recording VCR and the LANC mode is set to "M."

When the linear counter on this (recording) VCR becomes zero during synchronized recording pause mode.

# Ouring synchronized editing The EDIT function is activated

- automatically.
- If the linear counter becomes zero. synchronized editing stops.
- The COUNTER RESET bulton cannot function.

# Connecting Video Equipment with the **CONTROL S Connector**



:Signal flow

#### When using the CONTROL S cable

The synchronized editing using the CONTROL S connector is the same as the synchronized editing using the LANC connector. This enables you to pause both VCRs and release pause mode of both VCRs.

You can only perform synchronized editing using the CONTROL S IN connector when the other VCR has the CONTROL S OUT connector.

Set the Command Mode of the other VCR to VTR2.

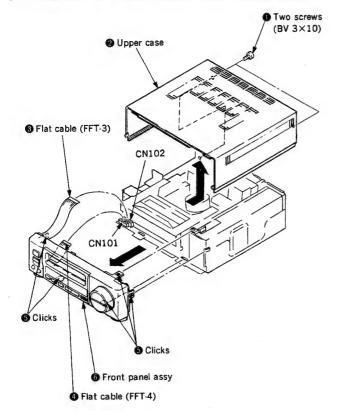
Press SYNCHRO EDIT on the other VCR having the CONTROL S OUT connector.

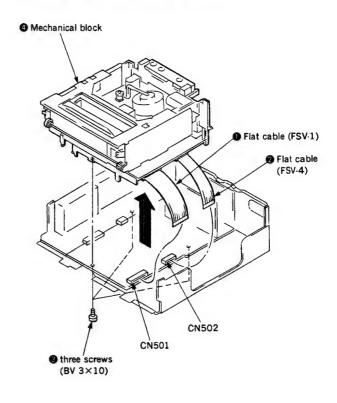


# SECTION 3 DISASSEMBLY

# 3-1. REMOVAL OF FRONT PANEL AND UPPER CASE

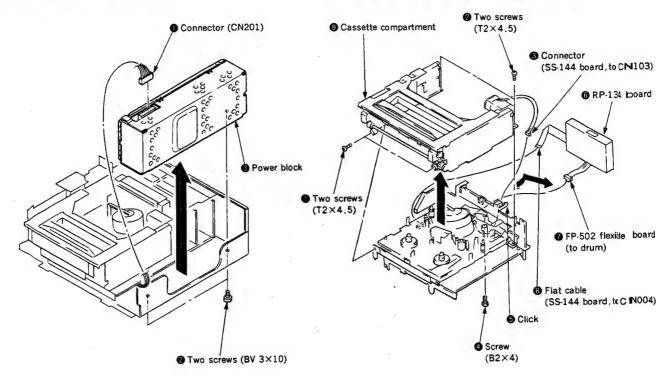




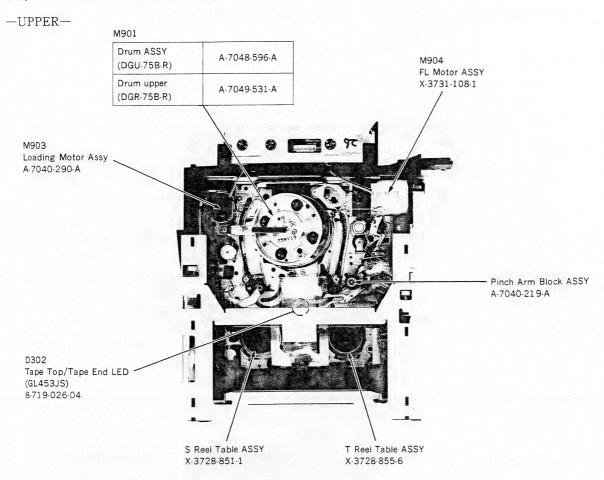


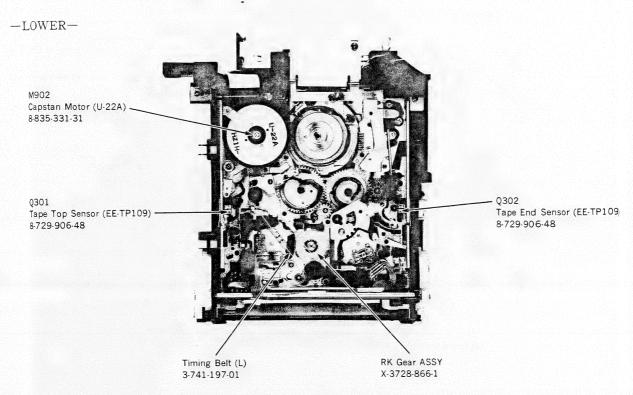
### 3-2. REMOVAL OF POWER BLOCK

### 3-4. REMOVAL OF CASSETTE COMPARTMENT



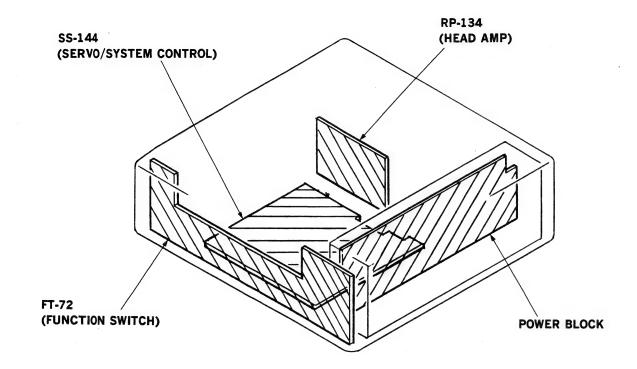
### 3-5. MECHANICAL INTERNAL VIEWS

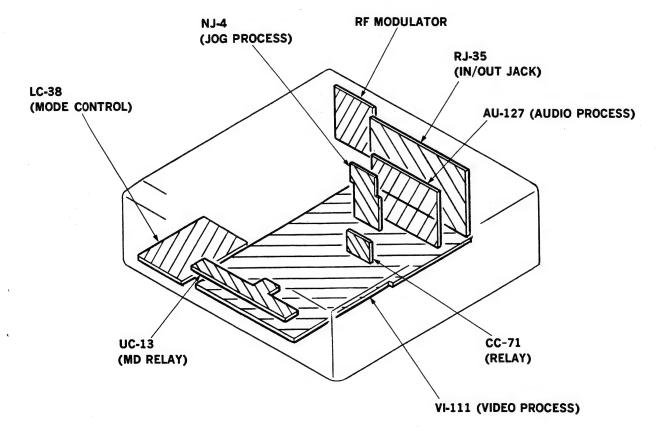




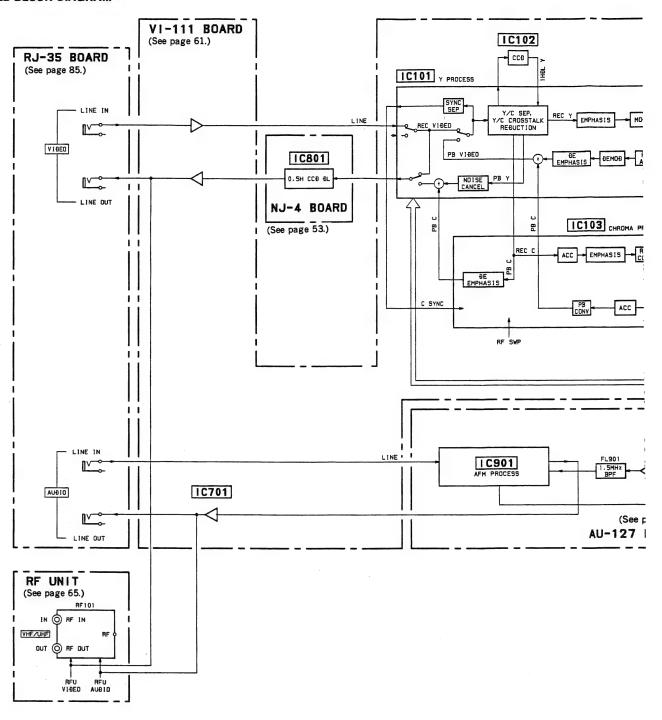
# SECTION 4 DIAGRAMS

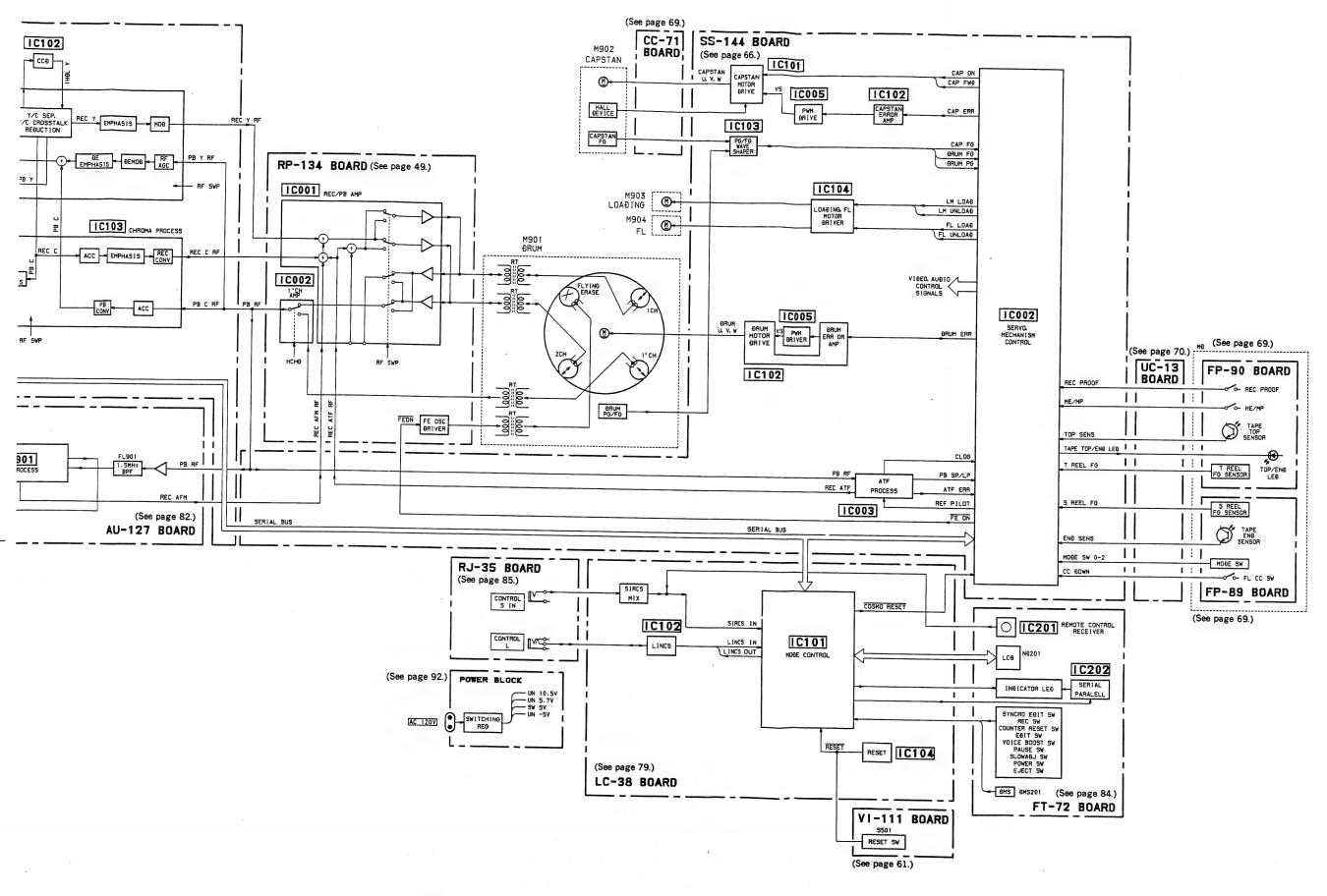
# 4-1. CIRCUIT BOARDS LOCATION



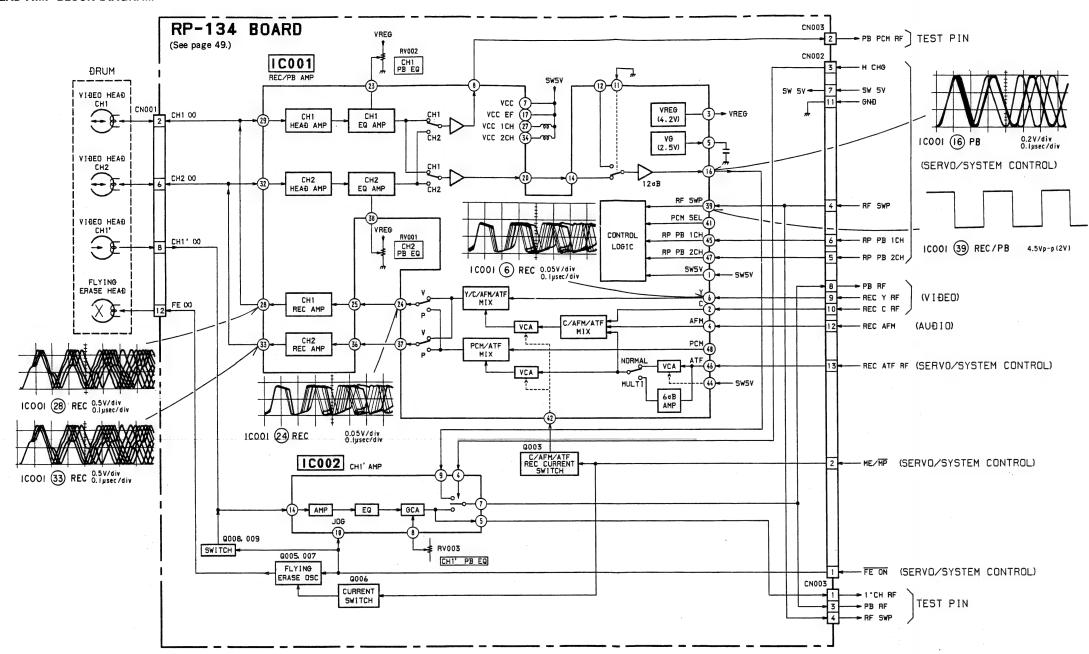


# 4-2. OVERALL BLOCK DIAGRAM

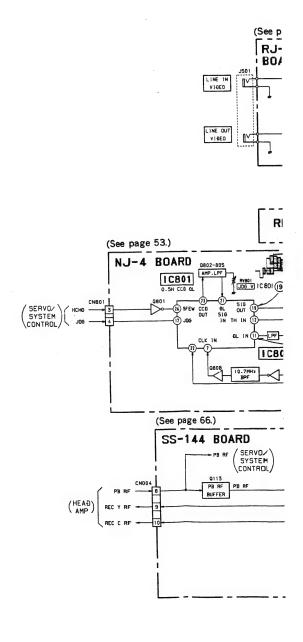


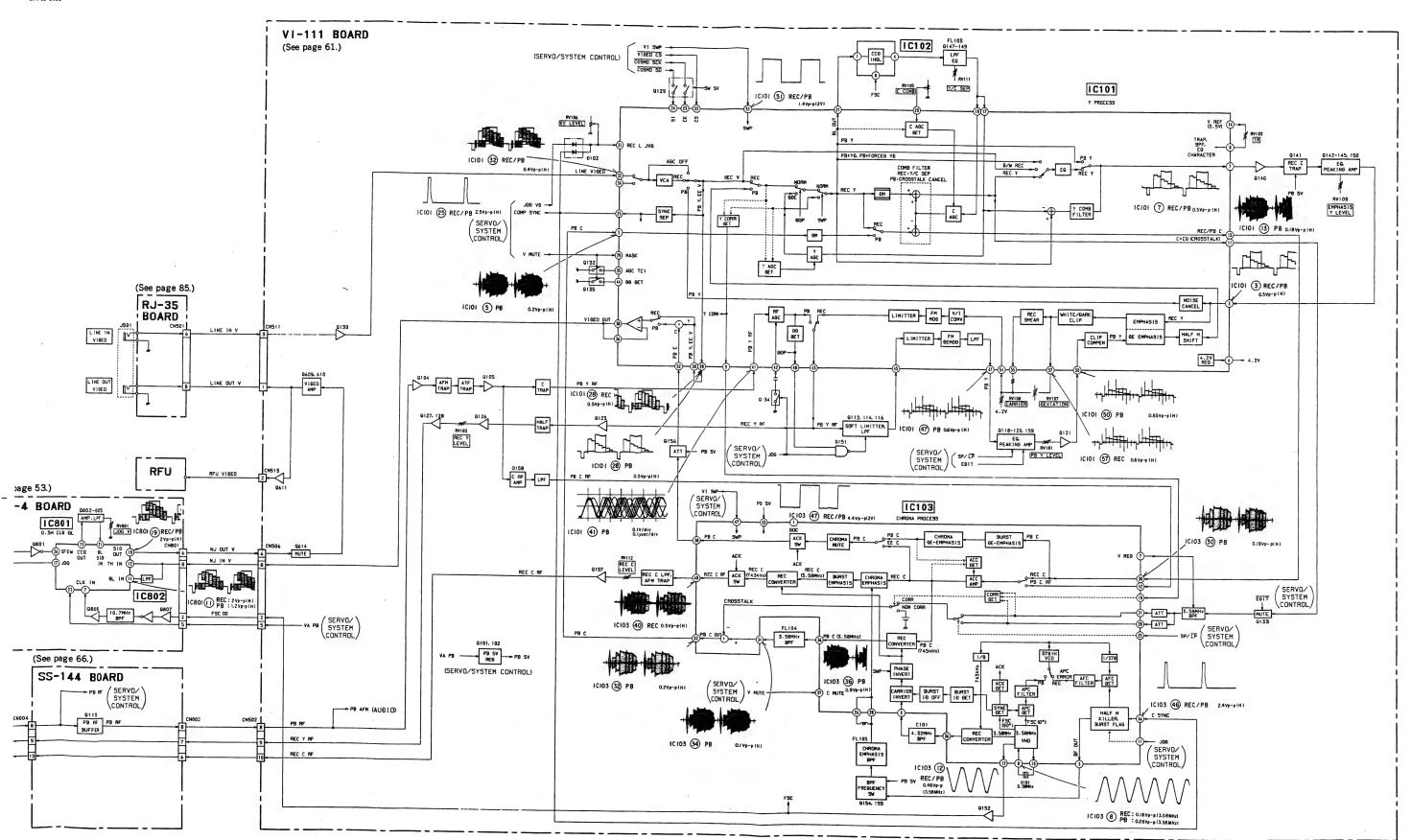


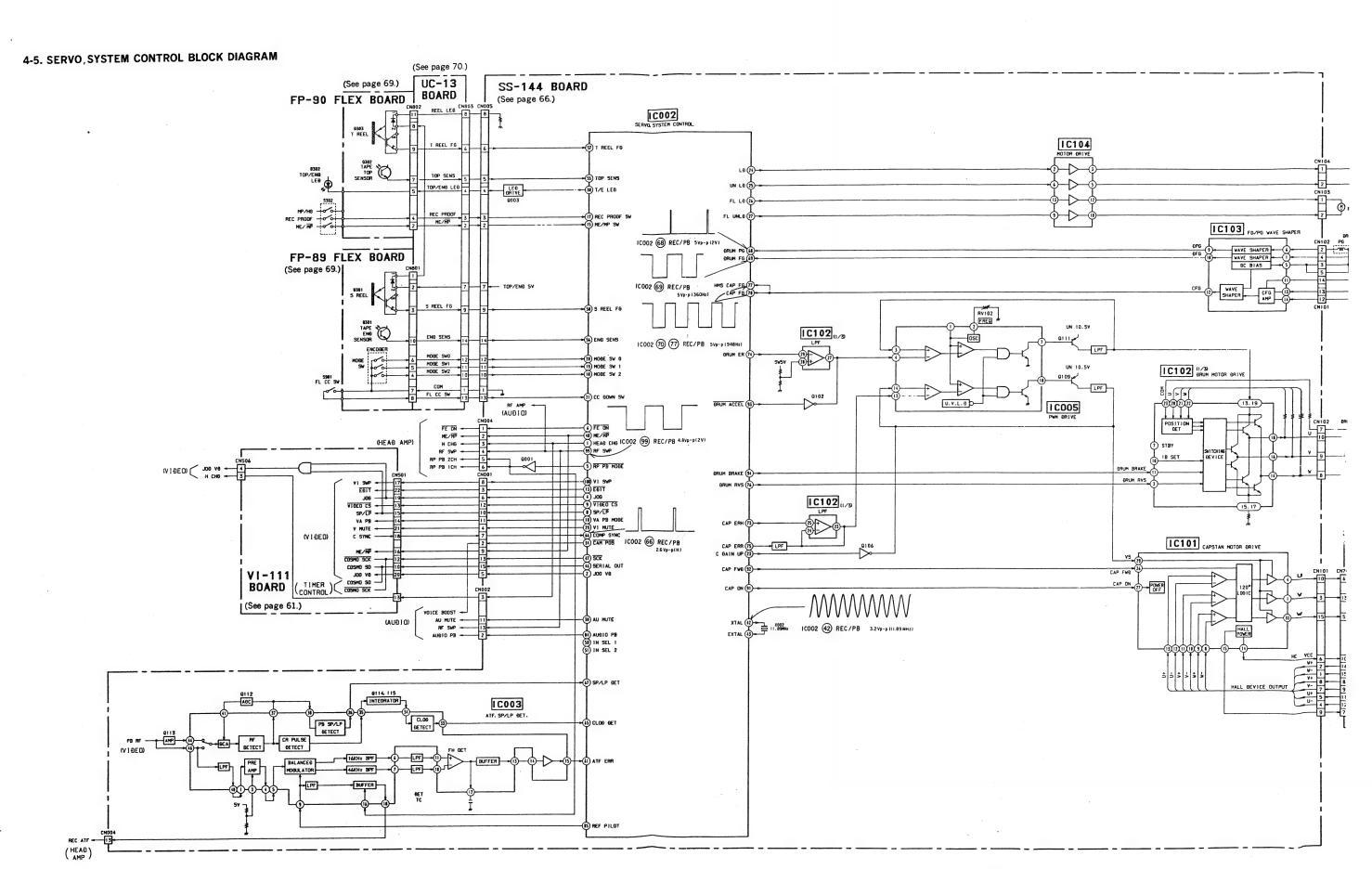
### 4-3. HEAD AMP BLOCK DIAGRAM

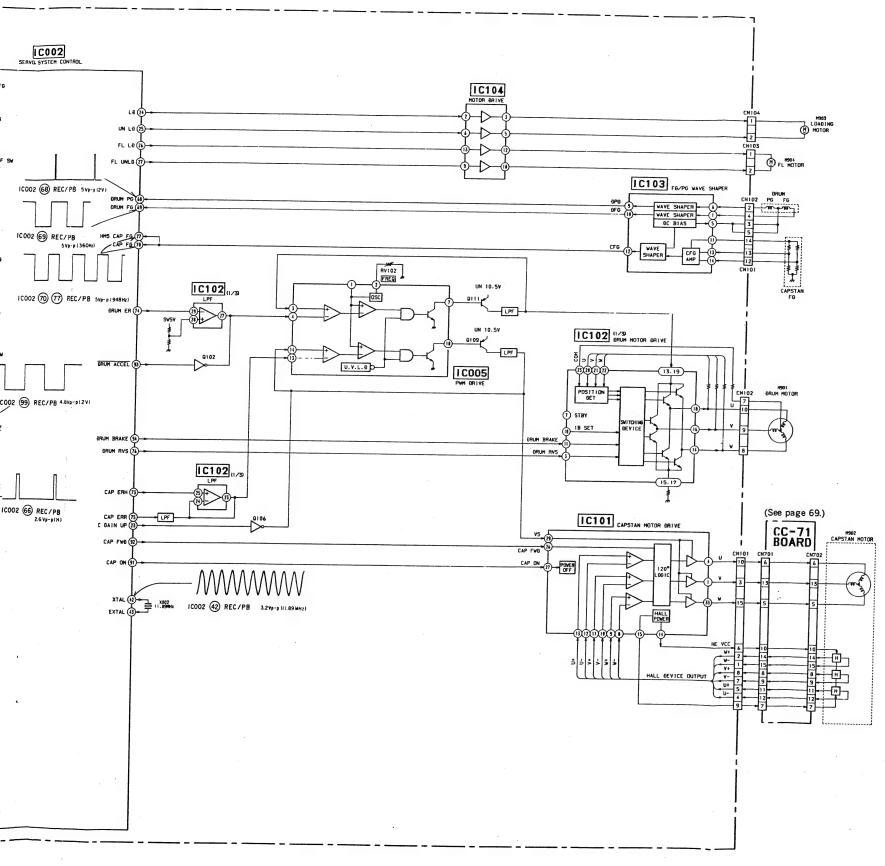


# 4-4. VIDEO BLOCK DIAGRAM









# 4-6. SYSTEM CONTROL - VIDEO BLOCK INTERFACE (SS-144 BOARD)

									V	TR MODE					
Signal	Pin No.	1/0						55	PICTURE	SEARCH	PB •	SLOW	REVERSE	REC	REC
O.B.I.			STOP	FF	REW	×2	-×2	PB -	CUE	REVIEW	PAUSE	SLOW	SLOW	REC	PAUSE
SP/LP	IC002 ®	0	* 1	Н	Н	* 1	* 2	* 2	* 2	* 2	* 1	* 1	* 1	* 11	H/L
V PB MODE	IC002 10	0	L	L	L	Н	Н	Н	Н	Н	Н	Н	H	L	L
JOG VD	IC002 ②	0	L	L	L	* 3	* 3	L	* 3	* 3	* 3	* 3	* 3	L	L
RP PB MODE	IC002 ⑤	0	L	L	L	L	L	L	L	L	L	L	L	Н	L
FE ON	IC002 ⑥	0	Н	Н	Н	Н	Н	Н	Н	Н	H	Н	Н	L	Н
HEAD CHANGE	IC002 ①	0	L	L	L	* 4	* 4	L	L	L.	* 4	* 4	* 4	L	L
VI SWP	IC002 (00)	0	L	* 6	* 6	* 5	<b>*</b> 5	* 6	* 6	* 6	* 5	<b>*</b> 5	* 5	* 6	* 6
RF SWP	IC002 99	0	L	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
JOG	IC002 4	0	L	L	L	Н	Н	L	Н	H	Н	H	H	L	L
SP/LP DET	IC002 🚳	I	L	* 7	* 7	* 7	* 7	L	* 7	* 7	* 7			H	Н
CLOG DET	IC002 65	I	Н	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	* 8	Н	* 8
COMP SYNC	IC002 66	I	* 9	* 9	* 9	* 9	* 9	* 9	<b>*</b> 9	* 9	* 9	* 9	* 9	<b>*</b> 9	* 9
AUDIO PB	IC002 84	0	L	L	L	* 10	* 10	Н	* 10	* 10	Н	* 10	* 10	L	L
AU MUTE	IC002 30	0	L	L	L	* 12	* 12	L	Н	Н	Н	H	Н	L	L
VIDEO CS	IC002 (9)	0							V-cyc	le"Low"pulse			-		
SO BUS	IC002 46	0		V-cycle pulse rank											
SCK	IC002 4D	0							V-cycle"	Low"pulse rank	•				

- \* 1. This outputs the result of determining what was the previous mode. "High" output in SP mode, "Low" output in LP mode.
- \* 3. Pseudo VD signal
- \* 4. "High" when the HEAD for special playback is selected.
- \* 5. Output pulse to supply the OR of HEAD CHANGE and RF SWP.
- \* 6. Pulse of 30Hz,50% duty (synchronized with the rotation of the drum).
- \* 7. "High" at the SP record portion and "Low" at the LP record portion of tape.
- \* 8. "High" at the blank portion or at any drop out portion of tape. Head clogging detection input.
- \* 2. This outputs the result of determining which record mode the playback tape has. \* 9. Composite synch signal input separated from line input video signal, camera video signal or playback video signal. (This signal has positive polarity).
  - \* 10. "Low" during shuttle editing from REC PAUSE, "High" while in any other mode.
  - \* 11. This varies according to SP/LP switching. It becomes "High" when SP mode is entered and "Low" when LP mode is entered.
  - \* 12. "Low" during ON of audio when ×2 speed playback, "High" during OFF.

VT	R MODE					
TURE	SEARCH	PB •	SLOW	REVERSE	REC	REC
	REVIEW	PAUSE	0.0	SLOW		PAUSE
	* 2	* 1	* 1	* 1	* 11	H/L
	Н	Н	Н	Н	L	L
	* 3	* 3	* 3	* 3	L	L
	L	L	L	L	Н	L
	Н	Н	Н	Н	L	Н
	L.	* 4	* 4	* 4	L	L
	* 6	* 5	<b>*</b> 5	* 5	<b>*</b> 6	* 6
	* 6	* 6	* 6	* 6	* 6	* 6
	Н	Н	Н	Н	L	L
	* 7	* 7	_	_	Н	Н
	* 8	* 8	* 8	* 8	Н	* 8
	* 9	* 9	* 9	* 9	<b>*</b> 9	* 9
	* 10	Н	* 10	* 10	L	L
	Н	Н	Н	Н	L	L
/-cycl	e"Low"pulse					
√-cycl	e pulse rank					

e blank portion or at any drop out portion of tape.

ycle"Low"pulse rank

ng detection input.

In the signal input separated from line input video signal, camera video signal

video signal. (This signal has positive polarity).
g shuttle editing from REC PAUSE, "High" while in any other mode.
according to SP/LP switching. It becomes "High" when SP mode is entered vhen LP mode is entered.

g ON of audio when ×2 speed playback, "High" during OFF.

# 4-7. MECHANICAL CONTROL — SERVO BLOCK INTERFACE (SS-144 BOARD)

									٧	TR MODE					
Signal	Pin No.	1/0	STOP	FF	REW	×2	-×2	PB	PICTURE	PICTURE SEARCH		CLOW	REVERSE	250	REC
			3101	FF	KEVV	^2	- ^ 2	FB	CUE	REVIEW	PAUSE	SLOW	SLOW	REC	PAUSE
T.REEL FG	IC002 50	I		* 1	* 1	* 1	* 1	* 1	* 1	* 1		* 1	* 1	* 1	_
S.REEL FG	IC002 🚳	I	_	* 1	* 1	* 1	* 1	* 1	* 1	* 1	_	* 1	* 1	* 1	_
ATF ERROR	IC002 📵	I	_	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2
DRUM PG	IC002 🚳	I	-	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3	* 3
DRUM FG	IC002 69	I		* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
CAP FG/HMS CAP FG	IC002 @ @	I		* 5	<b>*</b> 5	* 5	* 5	<b>*</b> 5	<b>*</b> 5	<b>*</b> 5		<b>*</b> 5	<b>*</b> 5	<b>*</b> 5	
CAP ON	IC002 🕦	0	L	Н	Н	Н	Н	Н	Н	Н	L	* 8	* 8	Н	L
REF PILOT	IC002 🚳	0	* 7	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
RP PB MODE	IC002 ⑤	0	L	L	L	L	L	L	L	L	L	L	L	Н	L
DRUM FWD/RVS * 11	IC002 ®	0	Н	Н	Н	Н	Н	н	Н	Н	Н	Н	Н	Н	Н
CAP FWD/RVS	IC002 <b>②</b>	0	L	Н	L	Н	L	Н	Н	L	L	* 8	* 9	Н	L
DRUM ERR	IC002 @	0	* 10	<b>*</b> 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10	* 10
CAP ERR	IC002 75	0	L	* 10	* 10	* 10	* 10	* 10	* 10	* 10	L	* 10	* 10	* 10	L
DRUM ON *12	IC002 7	0	L	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н	Н

- \* 1. The amplitude modulated pulse is input by the rotation of the reel. (200msec period during REC/PB mode)
- \* 2. ATF error voltage input.
- \* 3. One PG pulse is input by one rotation of the drum. Approximately 45Hz.
- \* 4. Six FG pulses are input by one rotation of the drum. Approximately 270Hz.
- \* 5. 360 FG pulses are input by one rotation of the capstan. Approximately 820Hz during REC/PB (SP) mode.
- \* 6. Four frequencies are output as synchronized with the rotation of the drum. f1=102.54kHz, f2=118.95kHz, f3=165.21kHz, f4=148.69kHz
- \* 7. f2 (118.95kHz) is output.
- \* 8. "High" pulse when tape is delivered.
- \* 9. "Low" pulse when tape is delivered.
- \* 10. PWM signal with a period of 21.5  $\mu$  sec.
- \* 11. Normally "High". Temporarily "Low" when a full top cassette is loaded (drum reverse rotation).
- \* 12. The "High" level is at approximately 1.3Vdc.

DE					
СН	PB •	SLOW	REVERSE	REC	REC
EVIEW	PAUSE		SLOW		PAUSE
* 1		* 1	* 1	* 1	_
* 1	_ ]	* 1	* 1	* 1	
* 2	* 2	* 2	* 2	* 2	* 2
* 3	* 3	<b>*</b> 3	* 3	* 3	* 3
* 4	* 4	* 4	* 4	* 4	* 4
<b>*</b> 5		<b>*</b> 5	<b>*</b> 5	* 5	_
Н	L	* 8	* 8	Н	L
<b>*</b> 6	* 6	* 6	* 6	* 6	* 6
L	L	L	L	H	L
Н	Н	Н	Н	н	Н
L	L	* 8	* 9	Н	L
k 10	* 10	* 10	* 10	* 10	* 10
× 10	L	* 10	* 10	* 10	L
Н	Н	Н	Н	Н	Н

t.

s delivered. delivered.

od of  $21.5 \mu$  sec.

orarily "Low" when a full top cassette is loaded (drum reverse

proximately 1.3Vdc.

-28-

-29-

# EV-C40

# 4-8. MECHANICAL CONTROL MICROCOMPUTER CXP80624 (SS-144 BOARD IC002) PORT FUNCTION DESCRIPTION

Pin No.	Signal	1/0	Function
1	HEAD CHG	0	HEAD CHANGE Signal.
2	JOG VD	0	Pseudo VD signal to be inserted into playback video signal when speed change playback is performed.
3	N. C.	-	Not used.
4	JOG	0	Speed change playback/normal playback select signal for the video circuit. "High" to select speed change playback.
5	RP PB MODE	0	REC/PB select signal for REC/PB amplifier (RP-134 board IC001) and ATF servo IC (SS-144 board IC003). "High" to select PB mode.
6	FE ON	0	Flying erase oscillation ON/OFF control signal. "Low" to activate the oscillation.
7	INT VD OUT	0	Timing reference for serial data communication. V-cycle "Low" pulse.
8	SP/LP	0	SP/LP select signal. "Low" to select LP.
9	VIDEO CS	0	Serial data communication chip select signal to the video IC. V-Sycle "Low" pulse.
10	VA PB MODE	0	REC/PB select signal for the video circuit. "High" for PB mode.
11	MACRO DET	I	Not used.
12	10/7 SW	I	Not used.
13	EDIT	0	Video circuit characteristic select signal.
14	VIRS	0	Not used.
15	ME/MP SW	I	ME/MP switch input. "Low" for MP, "High" for ME.
16	MP/HG SW	I	Not used.
17	REC PROOF SW	I	REC PROOF switch input. "High" for protected REC.
18	MODE SW 2	I	Mechanical deck MATRIX input.
19	MODE SW 1	I	Mechanical deck MATRIX input.
20	MODE SW 0	I	Mechanical deck MATRIX input.
21	CC DOWN SW	I	Cassette compartment clock switch input. "Low" for lock.
22	10/13 SW	I	Not used.
23	CAP GAIN UP	0	Capstan speed control signal ("High" during FF/REW mode).
24	LOAD	0	Loading motor control signal. "High" or "High" pulse output to allow loading.
25	UNLOAD	0	Loading motor control signal. "High" or "High" pulse output to allow unloading.
26	FL M LOAD	0	Front loading motor control signal. "High" or "High" pulse output to allow loading.
27	FL M UNLD	0	Front loading motor control signal. "High" or "High" pulse output to allow unloading.
28	N. C.		Not used.
29	VI MUTE	0	Video mute signal.
30	AUDIO MUTE	0	Audio mute signal.
31	N.C.	_	Not used.
32	N.C.	_	Not used.
33	COPY	0	Not used.
34	CAM POS	0	Voice boost select signal. "Low" to turn on.
35	PAL V	0	Not used.
36	HI8/NORMAL	0	Not used.
37	N.C.	_	Not used.
38	TOP END LED	0	ON/OFF signal for TAPE TOP/END LED.
39	MP	-	Connected to GND.
40	COSMO RESET	I	Reset signal. "Low" to reset.
41	VSS		GND
42	XTAL	0	11.89MHz clock oscillation circuit.
43	EXTAL	I	) — — — — — — — — — — — — — — — — — — —

Pin No.	Signal	1/0	Function
44	COSMO CS	I	Clip select signal from the mode control micromputer. V-cycle "Low" pulse.
45	SERIAL IN	I	Serial date input.
46	SERIAL OUT	0	Serial date output.
47	SCK	0	Serial clock output.
48	ME/MP	0	ME/MP select signal output. "Low" when MP Tape is used.
49	N. C.	_	GND
50	INSEL 1	0	Not used.
51	INSEL 2	0	Not used.
52	A VSS	_	GND
53	AVREF	-	Analog board reference voltage. Connected to +5V.
54	AVDD	_	Analog board power (+5V).
55	TOP SENS	I	Tape top sensing signal. This is normally "Low" and switches to "High" pulse input at tape
00	TOT SENS	<u> </u>	top.
56	END SENS	I	Tape end sensing signal. This is normally "Low" and switches to "High" pulse input at
57	T DEEL PO		tape end.
57	T REEL FG	I	T reel FG signal input.
58	S REEL FG	I	S reel FG signal input.
59	HIS DET	I	Not used.
60	AFM MODE DET	I	Not used.
61	ATF ERROR	I	ATF error, ATF lock error input.
62	S SW 3	I	Not used.
63	S SW 2	I	Not used.
64	S SW 1	I	Not used.
65	CLOG DET	I	This determines whether playback RF is present or not. "Low" under normal condition.
66	COMP SYNC	I	Composite sync signal separated form record/playback Y signal.
67	$SP/\overline{LP}$ DET	I	This determines which record mode the playback tape has when CUE/REVIEW/FF/REW mode is entered.
68	DRUM PG	I	Drum PG signal input. Used for the drum phase servo. 22.2msec periodic "High" pulse.
69	DRUM FG	I	Drum FG signal input. Used for the drum speed servo. 3.7msec periodic pulse.
70	CAP FG	I	Capstan FG signal input. Approximately 948Hz during REC/PB mode for the capstan speed servo.
71	N. C.	_	+5V power.
72	DRUM ON	0	Not used.
73	CAP ERR H	0	Not used.
74	DRUM ERR	0	Drum error signal output.
75	CAP ERR	0	Capstan error signal output. 20.15µsec PWM signal.
76	DRUM FWD/ RVS	0	Drum rotational direction control signal. Normally "High".
77	HMS CAP FG	0	Capstan FG signal input. Used tape counter.
78	N.C.	I	+5V power.
79	MPHG/MP	0	Not used.
80	S/VIDEO	0	Not used.
81	N.C.	_	Not used.
82	AFM OUTSEL	0	Not used.
83	AFM MODE	0	Not used.

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Pin No.	Signal	1/0	Function
44	COSMO CS	I	Clip select signal from the mode control micromputer. V-cycle "Low" pulse.
45	SERIAL IN	I	Serial date input.
46	SERIAL OUT	0	Serial date output.
47	SCK	0	Serial clock output.
48	ME/MP	0	ME/MP select signal output. "Low" when MP Tape is used.
49	N. C.	_	GND
50	INSEL 1	0	Not used.
51	INSEL 2	0	Not used.
52	A VSS	-	GND
53	AVREF		Analog board reference voltage. Connected to +5V.
54	AVDD	_	Analog board power (+5V).
55	TOP SENS	I	Tape top sensing signal. This is normally "Low" and switches to "High" pulse input at tape top.
56	END SENS	I	Tape end sensing signal. This is normally "Low" and switches to "High" pulse input at tape end.
57	T REEL FG	I	T reel FG signal input.
58	S REEL FG	I	S reel FG signal input.
59	HI8 DET	I	Not used.
60	AFM MODE DET	I	Not used.
61	ATF ERROR	I	ATF error, ATF lock error input.
62	S SW 3	I	Not used.
63	S SW 2	I	Not used.
64	S SW 1	I	Not used.
65	CLOG DET	I	This determines whether playback RF is present or not. "Low" under normal condition.
66	COMP SYNC	I	Composite sync signal separated form record/playback Y signal.
67	SP/LP DET	I	This determines which record mode the playback tape has when CUE/REVIEW/FF/REW mode is entered.
68	DRUM PG	I	Drum PG signal input. Used for the drum phase servo. 22.2msec periodic "High" pulse.
69	DRUM FG	I	Drum FG signal input. Used for the drum speed servo. 3.7msec periodic pulse.
70	CAP FG	I	Capstan FG signal input. Approximately 948Hz during REC/PB mode for the capstan speed servo.
71	N. C.		+5V power.
72	DRUM ON	0	Not used.
73	CAP ERR H	0	Not used.
74	DRUM ERR	0	Drum error signal output.
75	CAP ERR	0	Capstan error signal output. 20.15µsec PWM signal.
76	DRUM FWD/	0	Drum rotational direction control signal. Normally "High".
77	HMS CAP FG	0	Capstan FG signal input. Used tape counter.
78	N.C.	I	+5V power.
79	MPHG/MP	0	Not used.
80	S/VIDEO	0	Not used.
81	N.C.		Not used.
82	AFM OUTSEL	0	Not used.
83	AFM MODE	0	Not used.

Pin No.	Signal	1/0	Function
84	AUDIO PB	0	REC/PB select signal for the audio circuit. "High" for PB mode.
85	REF PILOT	0	Reference pilot signal for the ATF seruo. Four frequencies are selectively switched from one to another as synchronized with the rotation of the drum. $f_1 = 102.52 \text{kHz}$ , $f_2 = 118.95 \text{kHz}$ , $f_3 = 165.21 \text{kHz}$ , $f_4 = 148.69 \text{kHz}$ .
86	N. C.	_	N. C
87	N. C.	_	Connected to GND.
88	VSS	-	GND.
89	VDD	_	+5V power.
90	VPP	_	+5V power.
91	CAP ON	0	Capstan driver ON/OFF control signal. "High" to turn capstan ON.
92	CAP FWD/RVS	0	Capstan rotational direction control signal. "High" for FWD. "Low" for RVS.
93	DRUM ACCEL	0	Drum acceleration pulse.
94	DRUM BRAKE	0	Drum deceleration pulse.
95	PCM AFREC	0	Not used,
96	PCM REC INH	0	Not used.
97	FE RA	0	Not used.
98	PCM PB	0	Not used.
99	RF SWP	0	RF switching pulse signal.30Hz,50% duty pulse.
100	VI SWP	0	Video switching pulse.

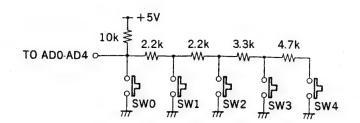
# 4-9. MODE CONTROL MICRO COMPUTER MB89093 (LC-38 BOARD IC101) PORT FUNCTION DESCRIPTION

Pin No.	Signal	1/0	Function
1	TEST MODE 1	I	Connected to GND.
2	TEST MODE 2	I	Connected to GND.
3	X0		System clock (10MHz).
4	X1		System clock (10MHz).
5	VSS	I	+5V power.
6	RESET	I	Reset input.
7	PAL/NT	I	PAL/NTSC select. "Low" for NTSC.
8	J/ <del>UC</del>	I	J/UC select. "Low" for UC.
9—15	N.C.	I	No connected.
16	INT V	I	V synchronization signal input.
17	LANC POWER CONT	0	"Low" output when power off, LANC M.
18	LANC POWER ON	I	LANC POWER control signal input.
1922	N.C.	I	No connected.
23	MAIN LED	0	Not used.
24	VTR LED	0	LED lighting up on "Low".
25	VOICE BOOST LED	О	VOICE BOOST LED lighting up on "Low".
26		I	Connected to VCC.
27	N.C.	I	No connected.
28	SP DATA	0	Sift register. Data output.
29	SP CLK	0	Sift register. Clock output.
30	SIRCS IN	I	SIRCS input.
31	SP STR	0	Sift register. Strobe output.
32	SP OE	0	Sift register. OE output.
33	SUB LED	0	Not used.
34-46	N.C.	I	No connected.
47	VCC	I	+5V power.
4855	S0-S7	0	LCD display SEGMENT signal output. 0-7
56	VSS		GND
5764	S8-S15	0	LCD display SEGMENT signal output. 8—15
6568	V3-V0	I	LCD drive power terminal.
69-71	C0-C2	0	LCD display common signal. 0-2
72		0	No connected.
73	N.C.		No connected.
74	COSMO CS	0	Serial communication BUS.
75	TT SI	I	Serial communication BUS.
76	TT SO	0	Serial communication BUS.
77	TT SCK	0	Serial communication BUS.
78	COSMO RST	0	Serial communication BUS.
79	N.C.	_	No connect.
80	N.C.		No connect.
81	AVSS	_	Analog GND.
82-86	AD0-AD4	I	KEY input.
			•

Pin No.	Signal	1/0	Function			
88	AD6	I	Not used.			
89	RF SW POSI 1	I	RF SWP position adjustment VR1 input.			
90	AVCC	-	Analog power.			
91	RF SW POSI 2	I	RF SWP position adjustment VR2 input.			
92	×2 ON	0	"H" output when ×2 mode.			
93	TV/VTR	0	TV/VTR ANT select. "H" when VTR.			
94	POWER ON	0	Power control signal. "H" when power is on.			
95	LANC IN	I	LANC DATA input.			
96	LANC OUT	0	LANC DATA output.			
97	N.C.	_	No connected.			
98	VCC	-	+5V power.			
99		-	No connected.			
100			No connected.			

# ● A/D PORT ALLOCATION

The A/D ports are allocated as shown below.

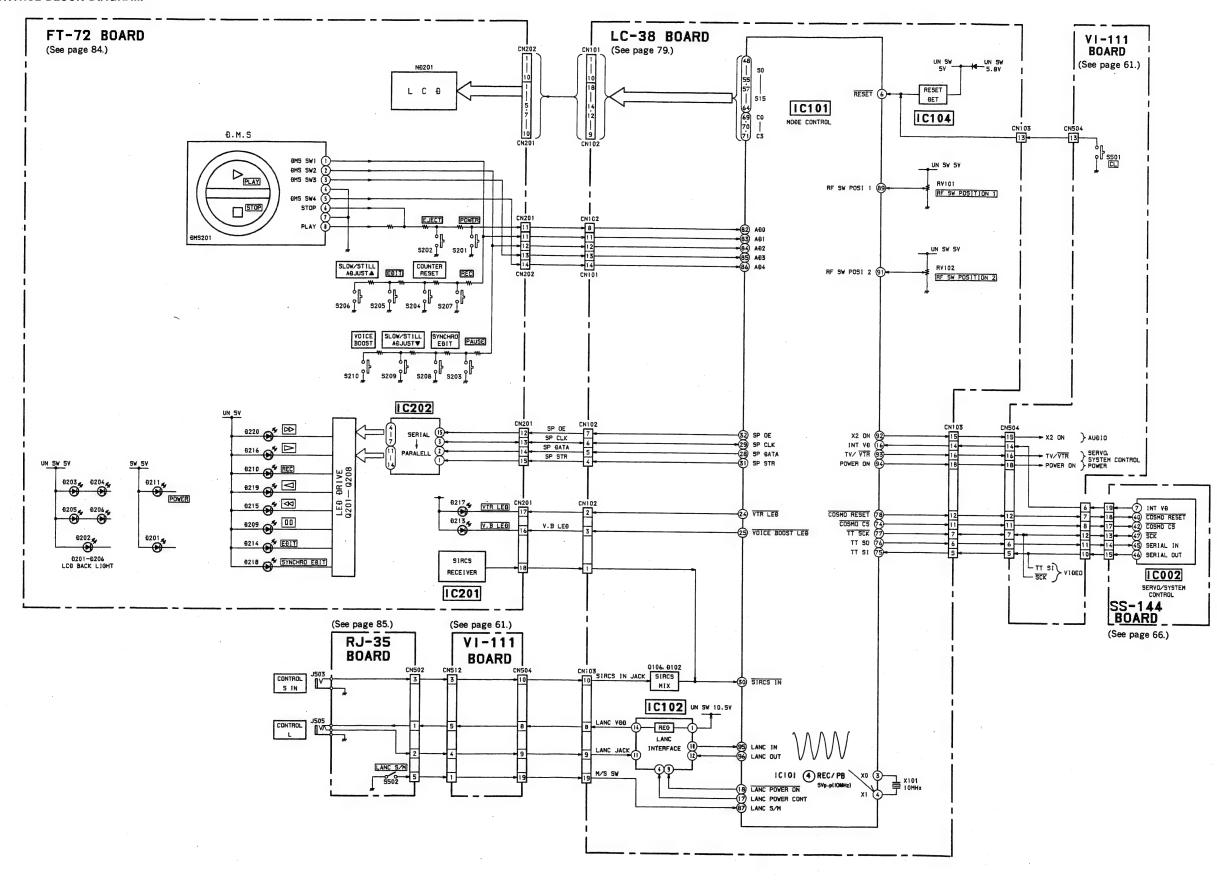


AD SW	Pin No.	SW0 0.01 [V]	SW1 0.9 [V]	SW2 1.5 [V]	SW3 2.2 [V]	SW4 2.8 [V]	NO INPUT 5.0 [V]
AD0	82	POWER	EJECT	STOP	PLAY		
AD1	83	DMS SW1	REC	COUNTER RESET	EDIT	SLOW/STILL ADJUST ▼	
AD2	84	DMS SW2	PAUSE	SYNCHRO EDIT	SLOW/STILL ADJUST ▲	VOICE BOOST	
AD3	85	DMS SW3					
AD4	86	DMS SW4	***************************************				
AD5	87	CONTROL L S/M					

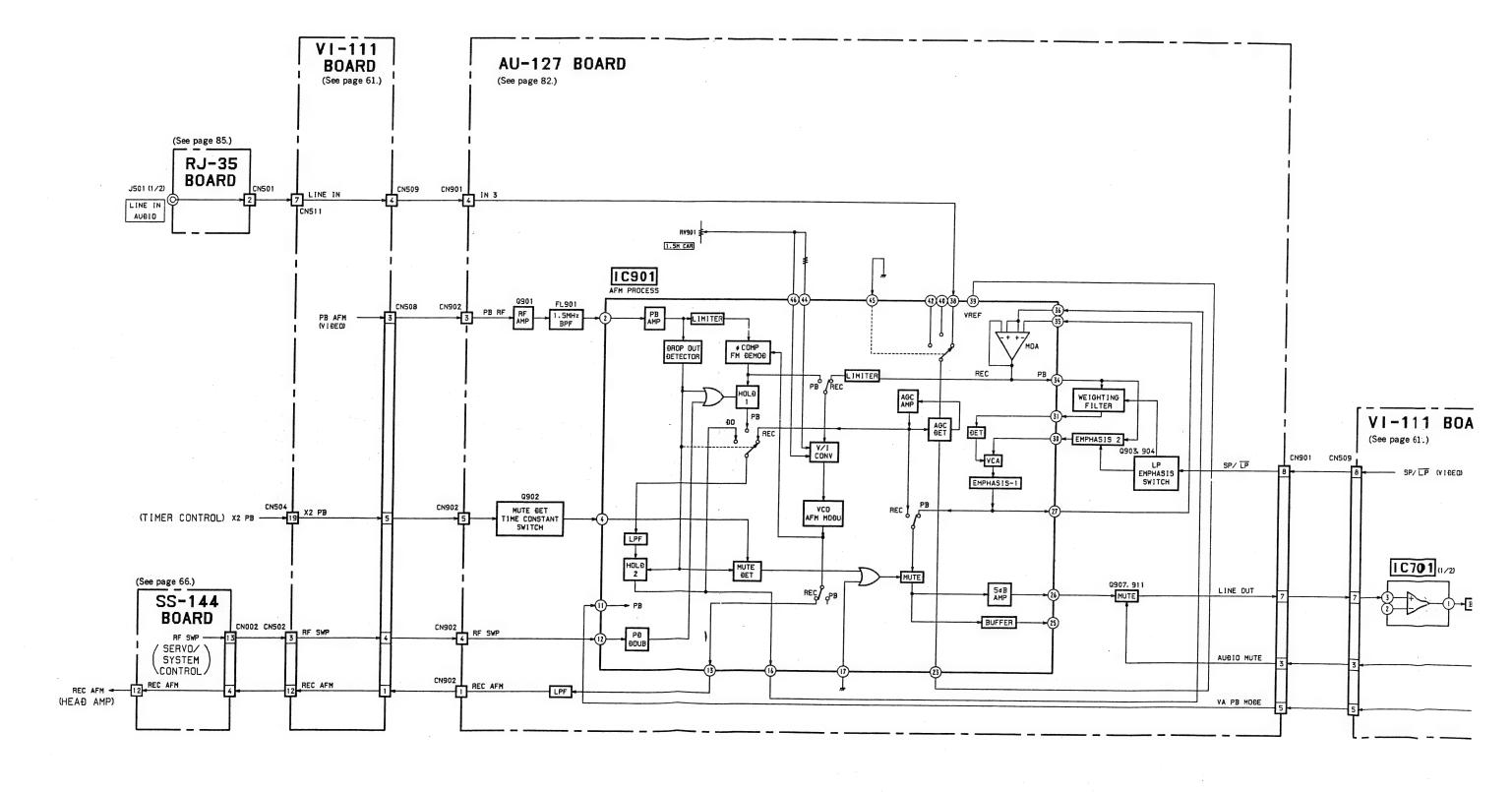
KEY input signals pass through the A/D ports as shown above.

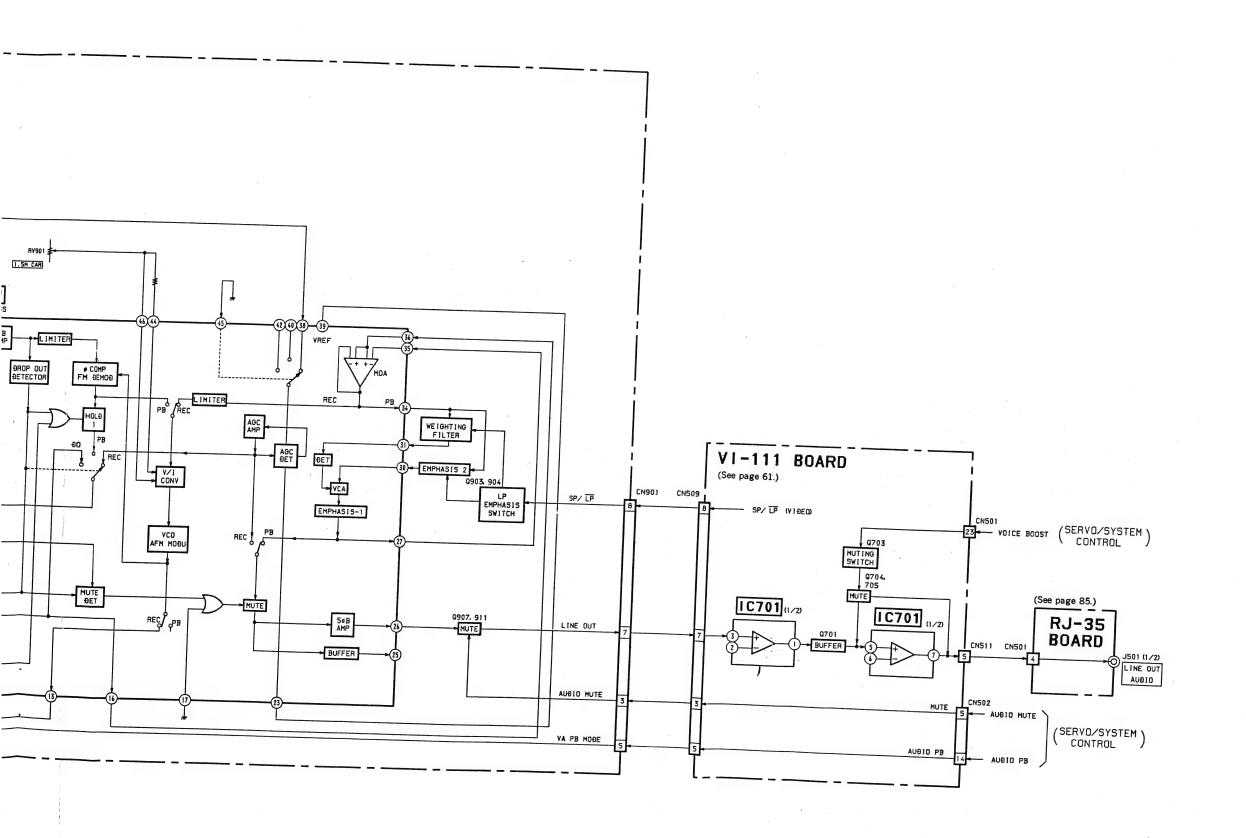
# **EV-C40**

# 4-10. MODE CONTROL BLOCK DIAGRAM



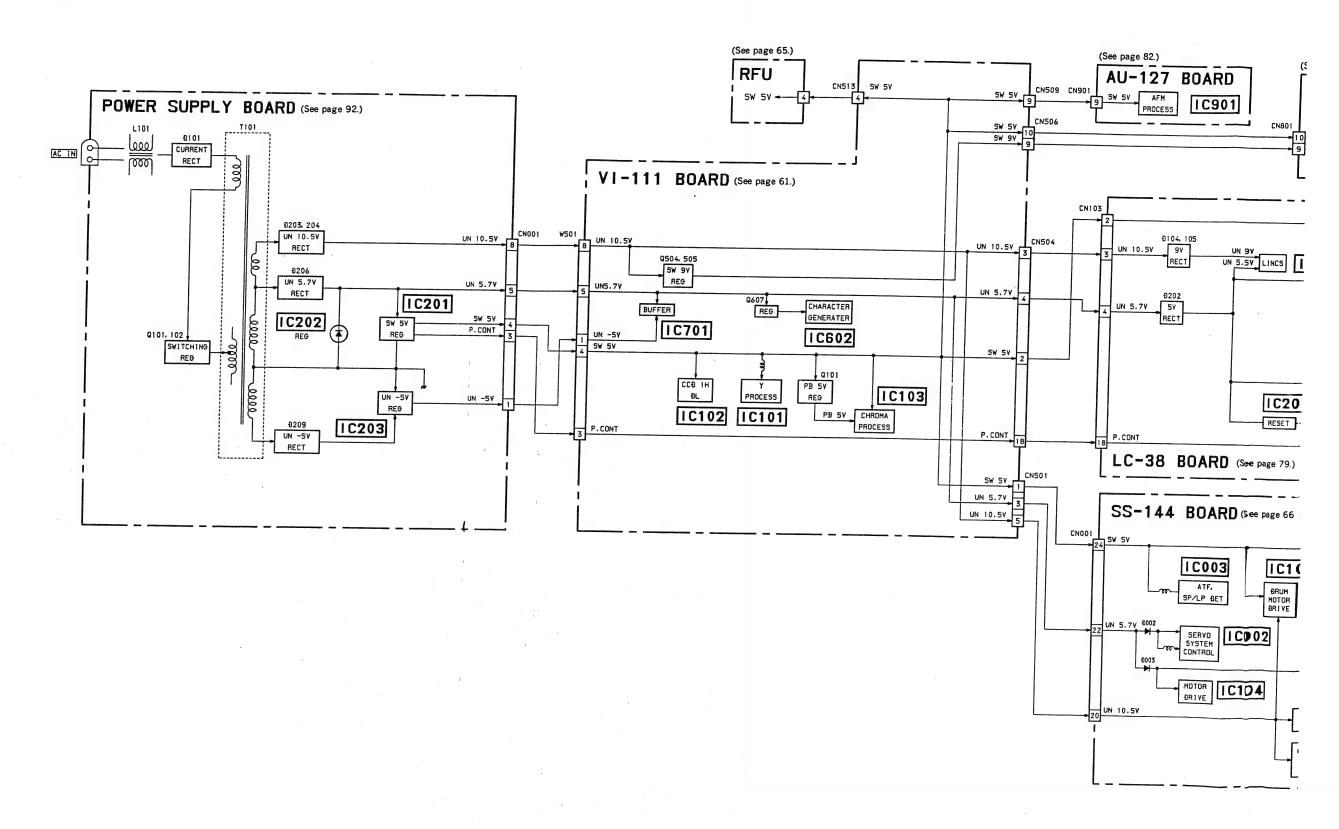
# 4-11. AUDIO BLOCK DIAGRAM

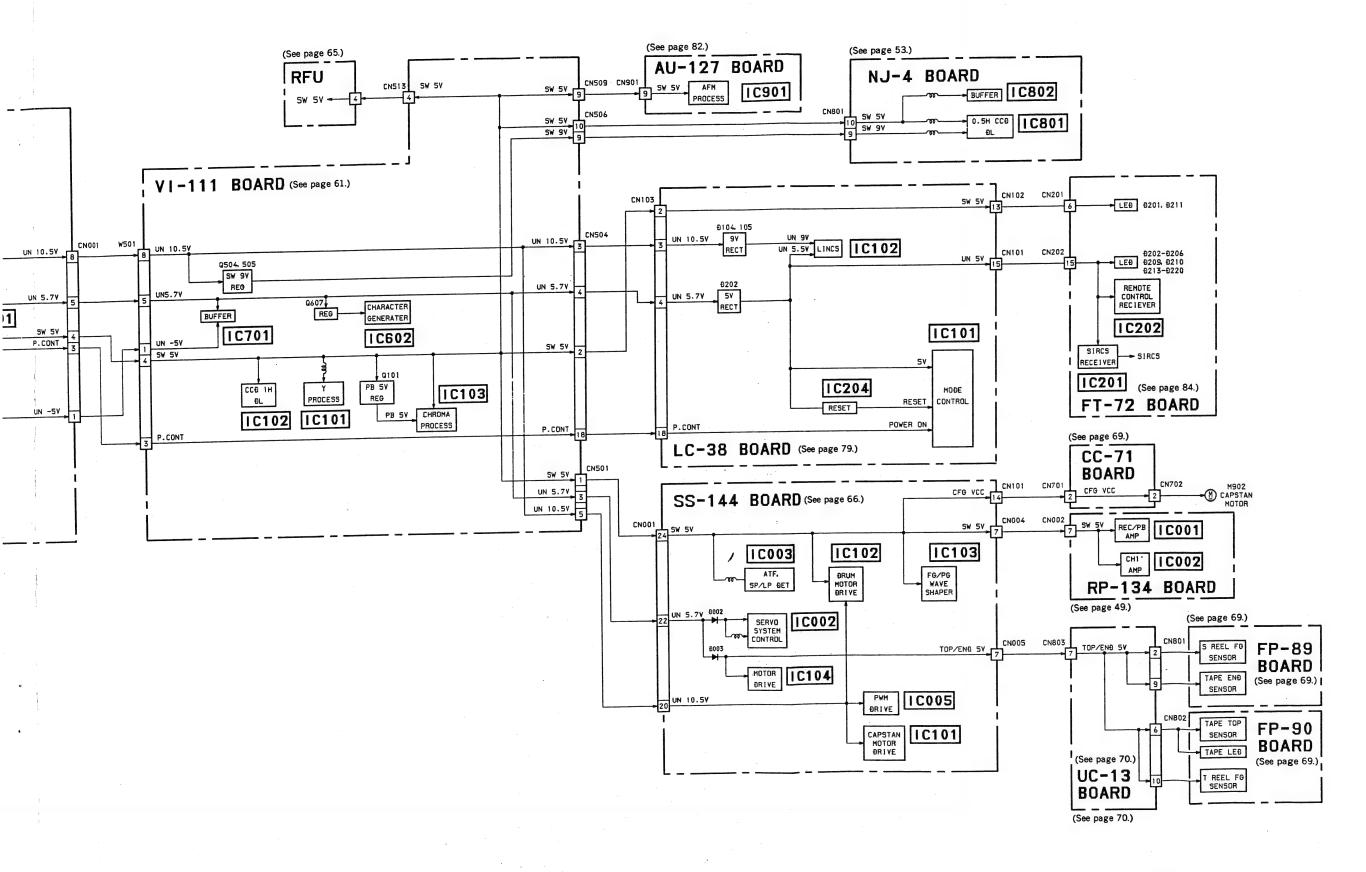


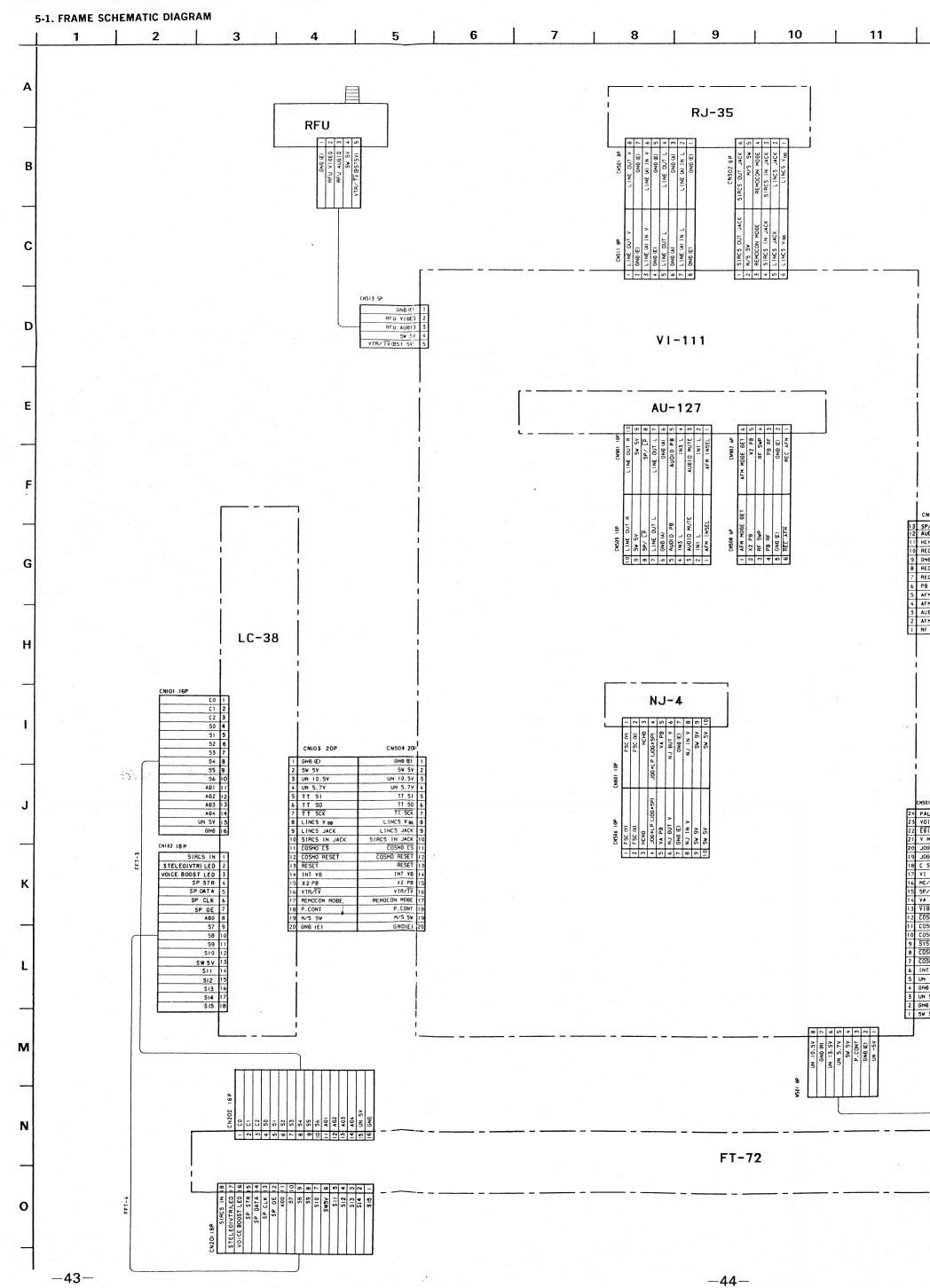


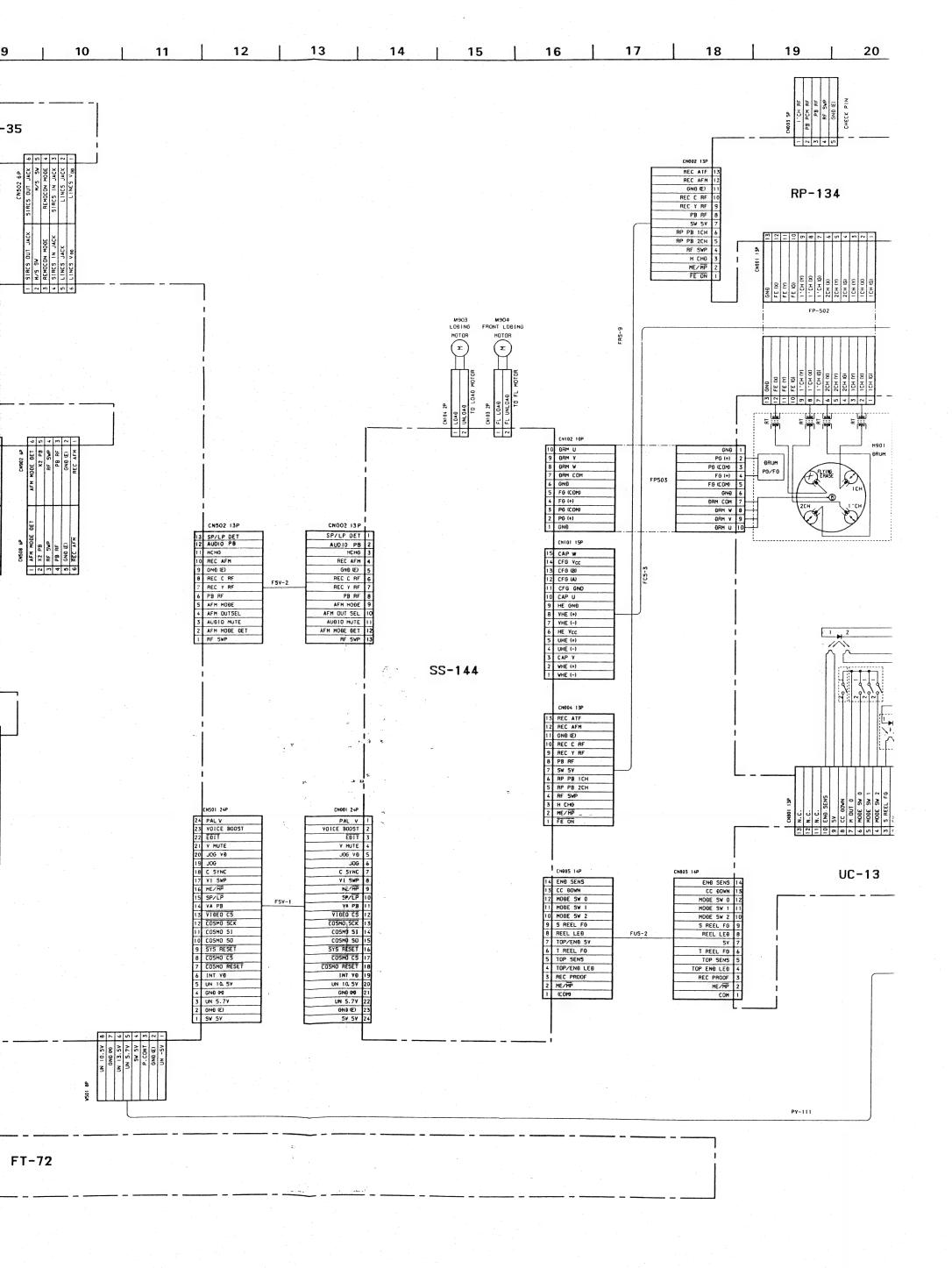
# EV-C40

# 4-12. POWER BLOCK DIAGRAM

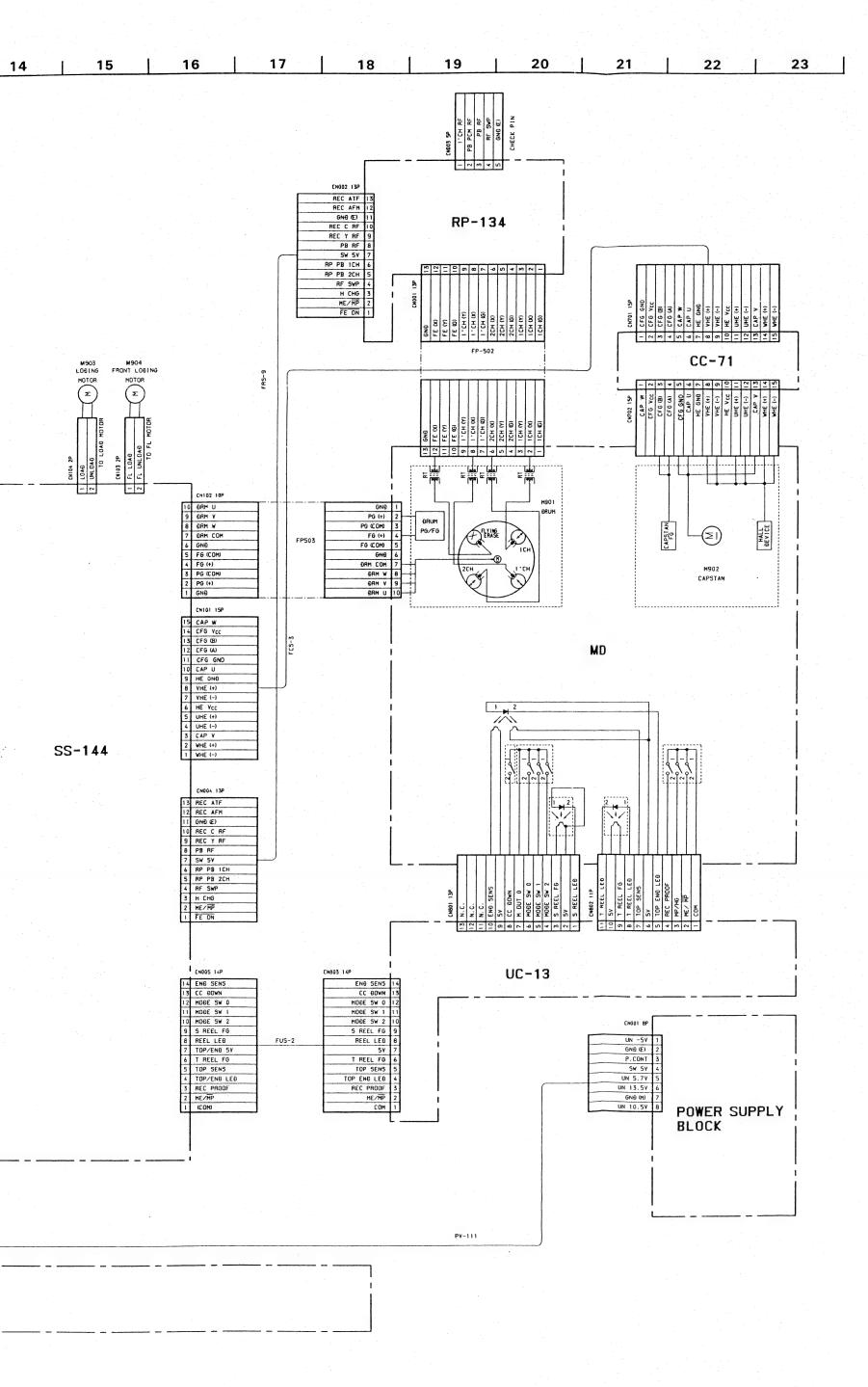








ing ing ber on the



# 5-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

# THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

(In addition to this, the necessary note is printed in each block.)

- For printed wiring boards.
- : Through hole.
  - (RP-134, NJ-4, VI-111, SS-144, CC-71, UC-13, AU-127 Boards)
- Pattern from the side which enables seeing.
- · Circled numbers refer to waveforms.

#### For schematic diagram.

- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
- Chip resistor are 1/8W or 1/10W unless otherwise noted.  $k\Omega$ : 1000 $\Omega$ ,  $M\Omega$ : 1000 $k\Omega$ .
- All capacitors are in  $\mu F$  unless otherwise noted, pF:  $\mu \mu F$ . 50V or less are not indicated except for electrolytics and
- All variable and adjustable resistors have characteristic curve B,
- : nonflammable resistor
- : fusible resistor.
- : panel designation internal component.

- B Line

- Readings are taken with a digital multimerer (DC10Ms
- tolerances.

fied by mark A or dotted line with mark A are critical for safety Replace only with part number specified.

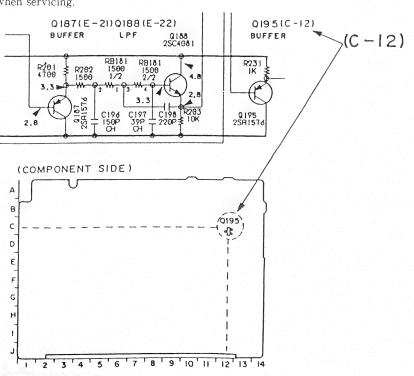
Les composants identifiés par une marque A sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spéci-

When indicating parts by reference number, please include

# [SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red as shown below. This enables to find the location on the board easily when servicing.

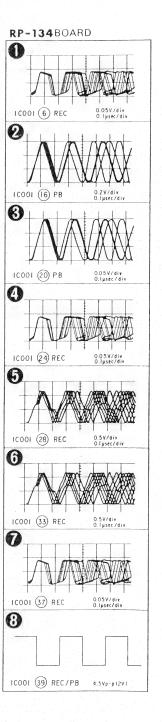


# RP-134 (HEAD AMP) PRINTED WIRING BOARD

RP-134 BOARD (COMPONENT SIDE

-Ref. No. RP-134 BOARD: 1000 series-

RP-134 BOARD



< IC  $\rightarrow$ ICO01 8-752-032-35 CXA1202Q-Z ICO02 8-759-062-52 CXA1443M

< TRANSISTOR >

Q003 8-729-422-36 2SB709A-0 Q005 8-729-216-22 2SA1162-Q Q006 8-729-422-36 2SB709A-Q Q007 8-729-422-36 2SB709A-Q 0008 8-729-421-19 UN2213 Q009 8-729-424-18 UN2113

Q005 Q006 Q007 Q008 A-2 A-2 A-3 G-3 G-3 D RP-134 BOARD (CONDUCTOR SIDE) H

: Through hole.

RP-134 BOARD IC001 C-5 IC002 B-3

Q003 Q005 Q006 Q007 Q008 Q009

ICOOI (6) REC 0.05V/div 0.1 psec/div

ICOOI (16) PB 0.2 V/div 0.1 psec/div

ICOOI (20) PB 0.5 V/div 0.1 psec/div

ICOOI (28) REC 0.5 V/div 0.1 psec/div

ICOOI (33) REC 0.5 V/div 0.1 psec/div

RP-134BOARD

MS

< 1C >
IC001 8-752-032-35 CXA1202Q-Z
IC002 8-759-062-52 CXA1443M

10001 39 REC/PB 4.5Vp-p12V

10001 37 REC

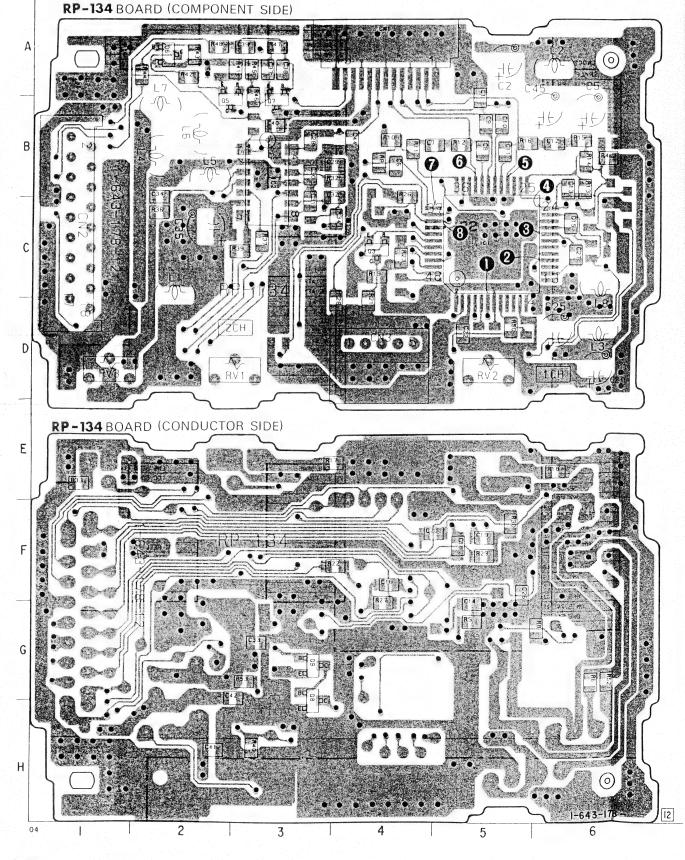
0

(C-12)

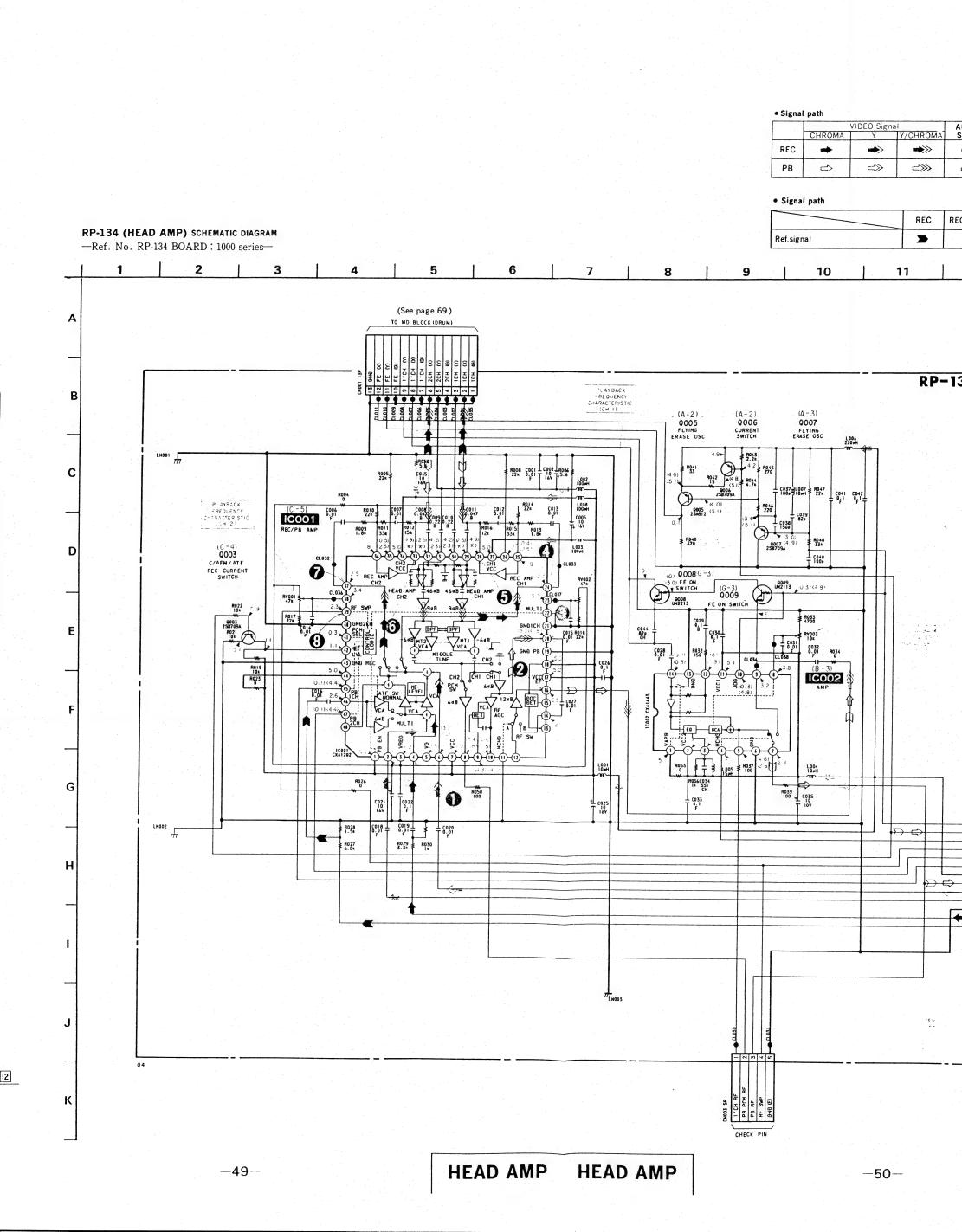
< TRANSISTOR >
Q003 8-729-422-36 2SB709A-Q
Q005 8-729-216-22 2SA1162-Q
Q006 8-729-422-36 2SB709A-Q
Q007 8-729-422-36 2SB709A-Q
Q008 8-729-421-19 UN2213
Q009 8-729-421-18 UN2113

RP-134 (HEAD AMP) PRINTED WIRING BOARD

-Ref. No. RP-134 BOARD: 1000 series-



: Through hole.





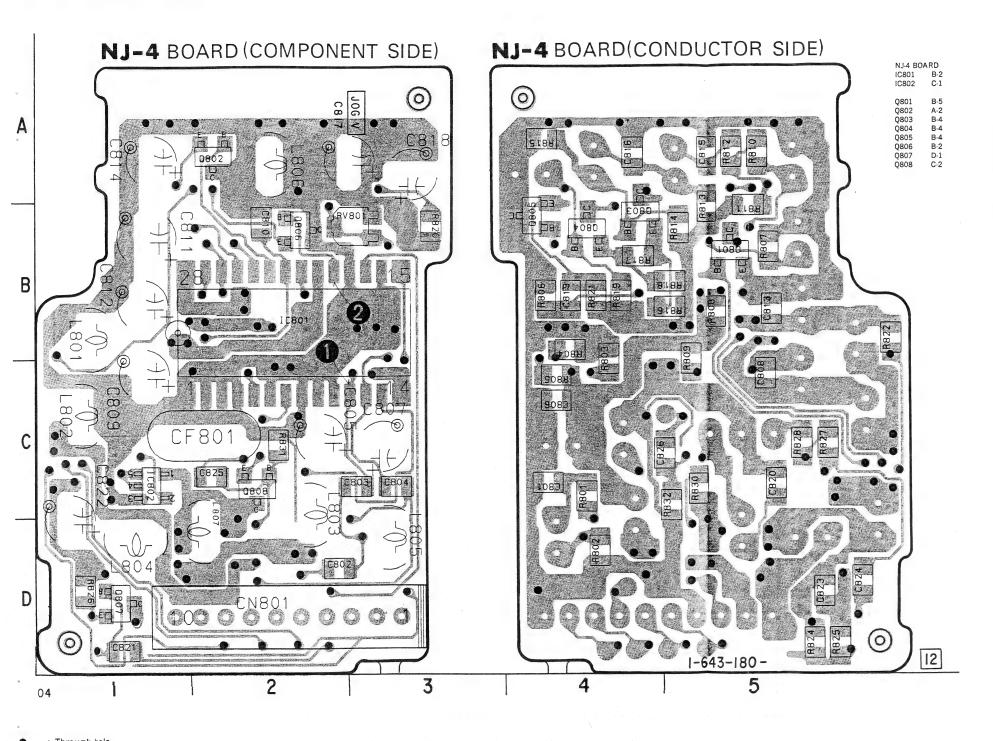
		AUDIO		
	CHROMA	OMA Y Y/CHROMA		Signal
REC	-	>	→>>>	<b>→</b>
РВ	↔	- ⇔	≒⋙	⇔

# • Signal path

	REC	REC/PB	РВ
Ref.signal	-		$\Sigma$

14 12 13 10 11 (See page 69.) TO MD BLOCK (DRUM) RP-134 BOARD PLAYBACK FREQUENCY CHARACTERISTIC (CH 1) (A-2) 0005 FLYING ERASE OSC (A-2) Q006 CURRENT SWITCH (A - 3) 0007 1.006 220≠H R041 22k 0.01 1037 \$1897 \$ R047 C041 C042 L008 I00#H 0005 254812 (5.1) R046 220 R010 22k ■ 039 820 C005 IC001 7 (038) 150, 150, 0007 (4 9) 258709A R013 R048 R040 470 L003 C040 100s (6) Q008 G -31 150) FE ON 150) FE 0009 UN2113 (0.31(4.9) (G-3) **Q009** RV001 = FE ON SWITCH R017 = 62° CH RV003 R032 IC002 PCH SV 10002 CXA1443 L001 10#H R039 + C035 R050 0 C025 10 16V I FE ON T 0.01  $\triangleright \Rightarrow$ CL 028 ME/ MP CL 027 R029 3.34 ≢ R030 CI 076 RP PB 2CH RP PB 1CH SW 5V PB RF TO SS-144 BOARD CNOO4 CL 024 FI 022 CI 021 (See page 66.) C1 020

-Ref. No. NJ-4 BOARD: 1000 series-



 **NJ-4 (**J —Ref. N

E

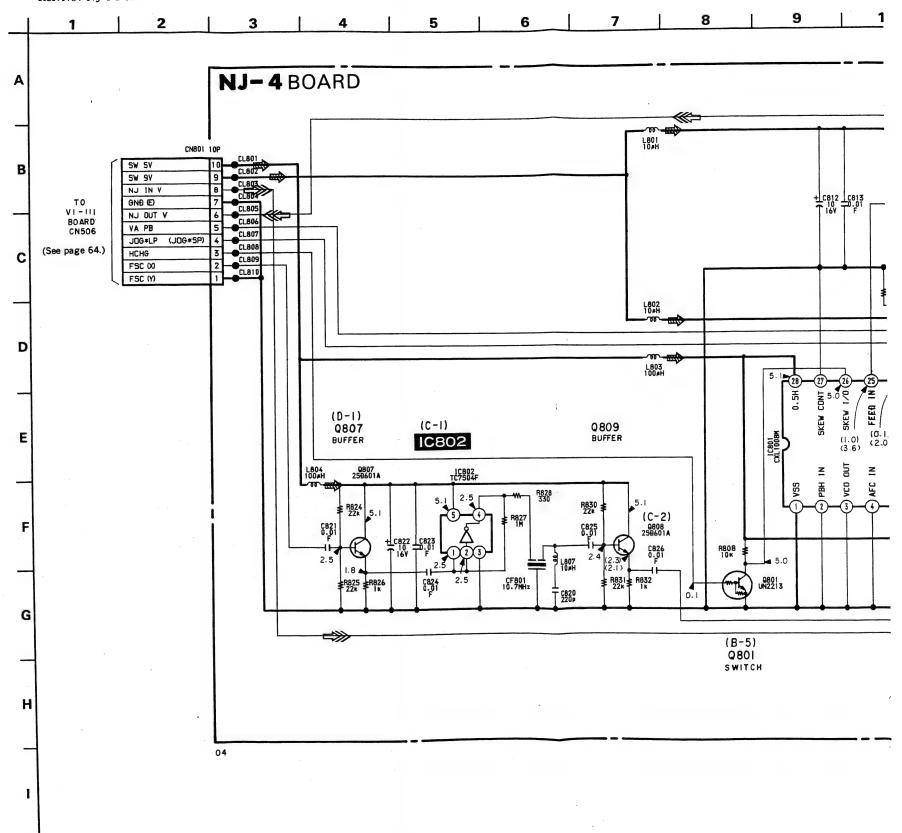
H

Through hole.

# NJ-4 BOARD IC801 B-2 IC802 C-1 Q801 Q802 Q803 Q804 Q805 Q806 Q807 Q808

# NJ-4 (JOG PROCESS) SCHEMATIC DIAGRAM

-Ref. No. NJ-4 BOARD: 1000 series-



< IC >
IC801 8-752-322-24 CXL1008M
IC802 8-759-031-84 SC7S04F

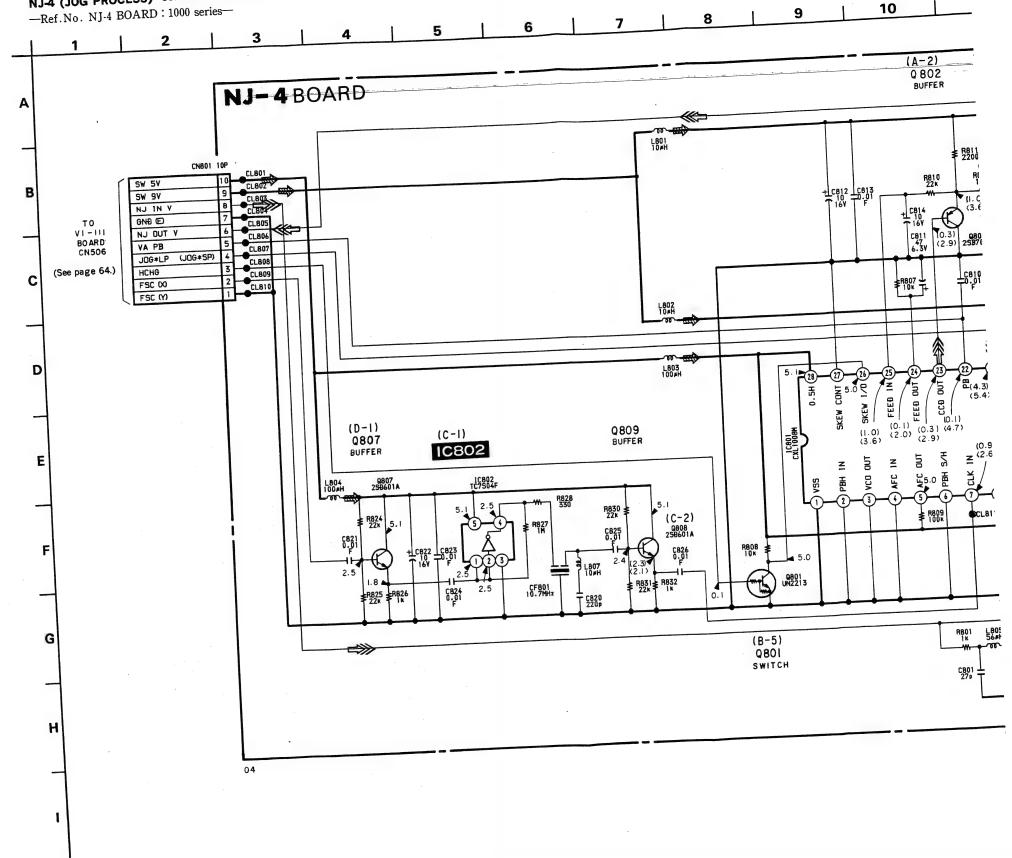
Q804 8-729-422-36 2SB709A-Q

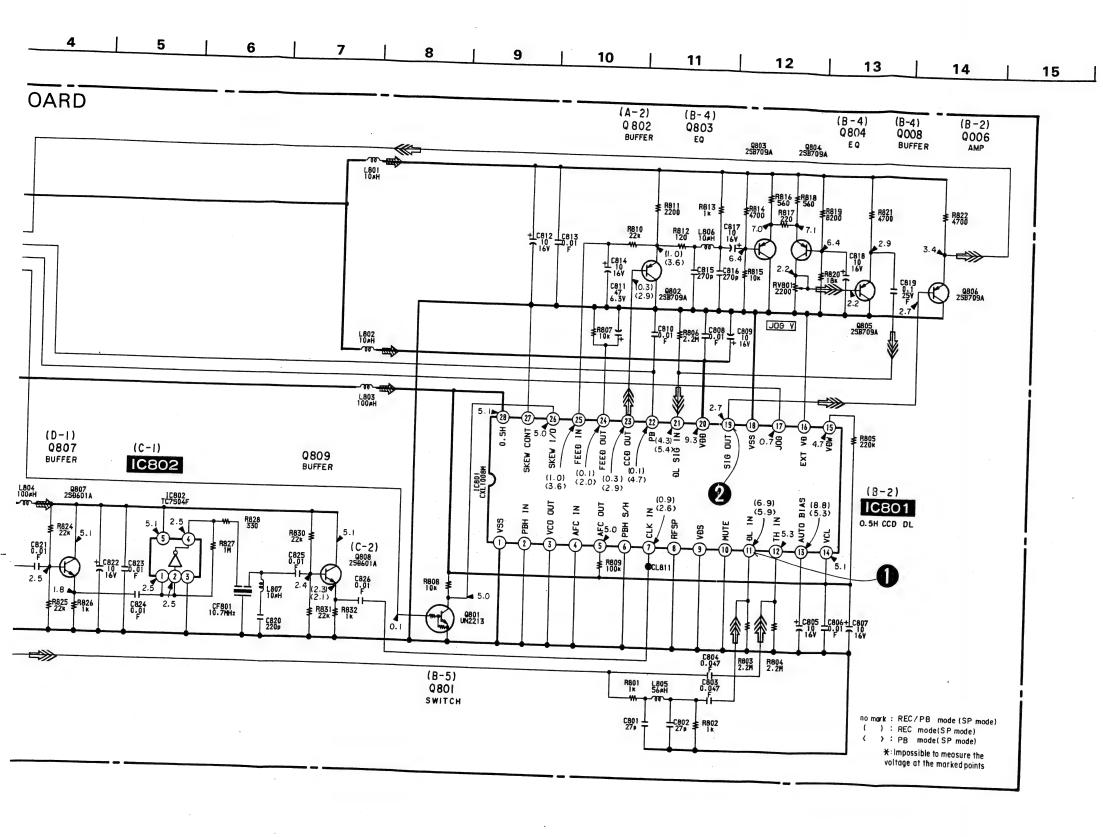
Q805 8-729-422-36 2SB709A-Q

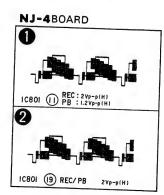
Q806 8-729-422-36 2SB709A-Q Q807 8-729-422-27 2SD601A-Q

Q808 8-729-422-27 2SD601A-Q

< IC > IC801 8-752-322-24 CXL1008M 4 BOARD 101 B-2 102 C-1 IC802 8-759-031-84 SC7S04F B-5 A-2 B-4 B-4 B-2 D-1 C-2 < TRANSISTOR >
Q801 8-729-421-19 UN2213
Q802 8-729-422-36 2SB709A-Q
Q803 8-729-422-36 2SB709A-Q
Q804 8-729-422-36 2SB709A-Q
Q805 8-729-422-36 2SB709A-Q Q806 8-729-422-36 2SB709A-Q Q807 8-729-422-27 2SD601A-Q Q808 8-729-422-27 2SD601A-Q NJ-4 (JOG PROCESS) SCHEMATIC DIAGRAM -Ref.No. NJ-4 BOARD: 1000 series-

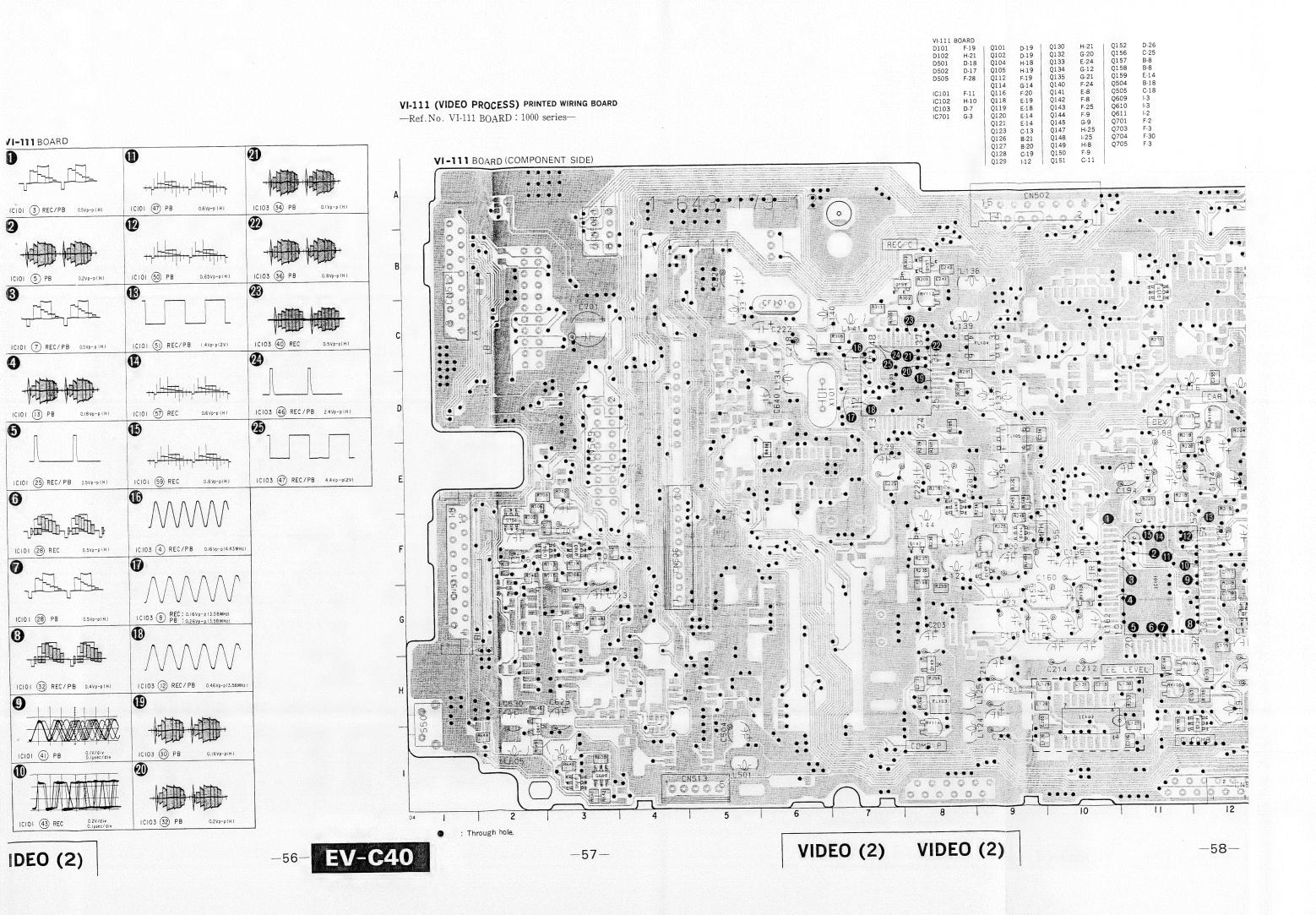


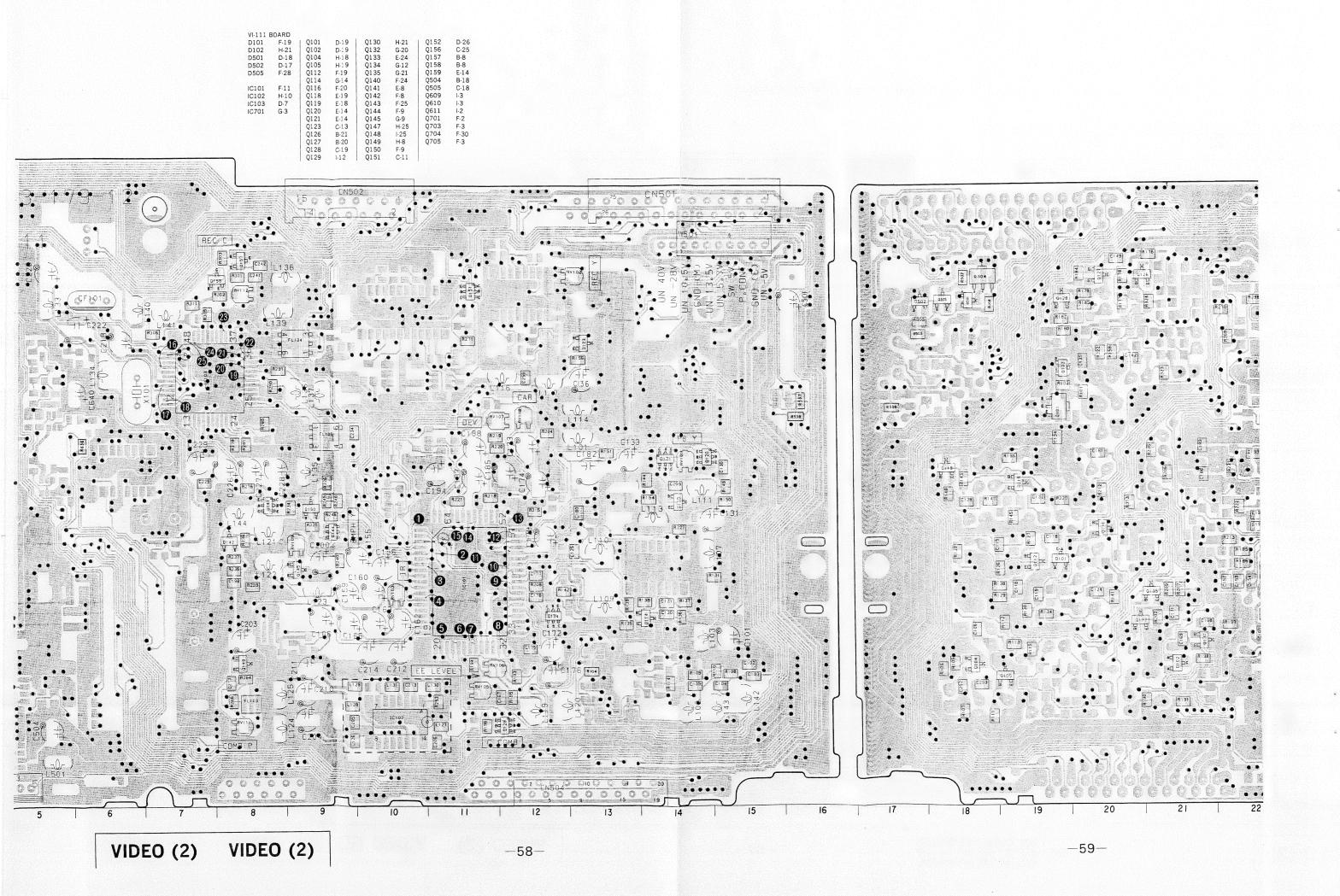


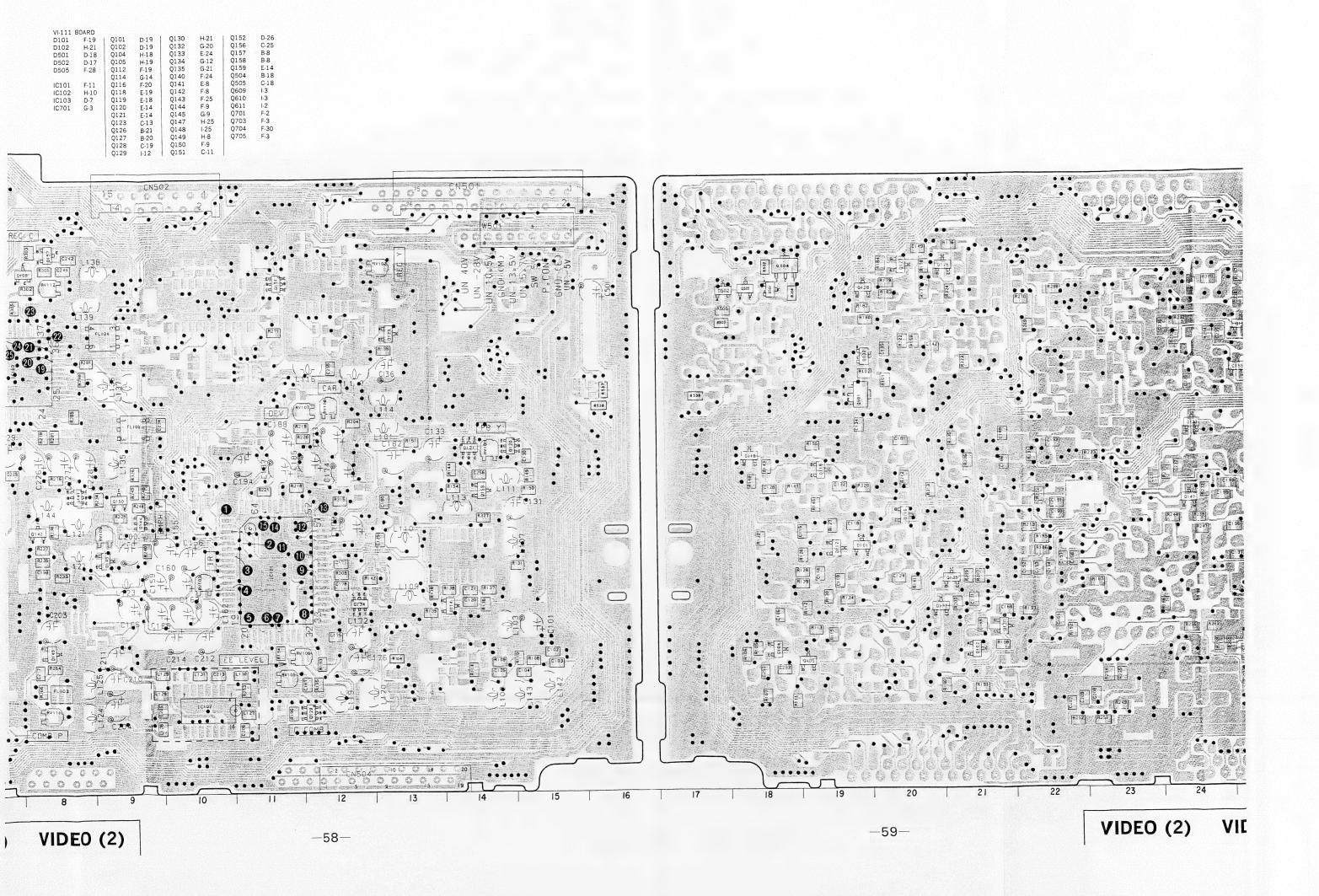


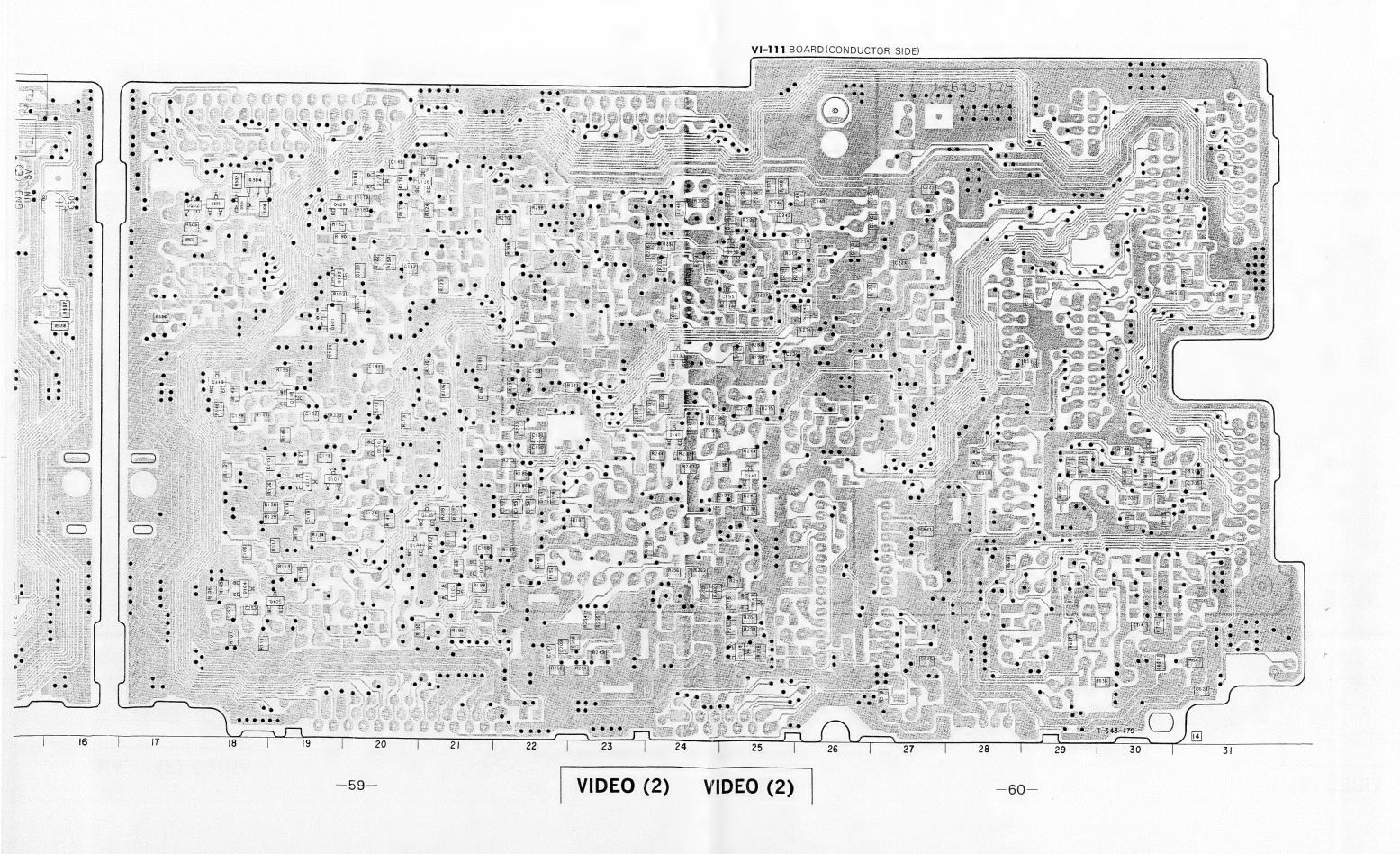
# Signal path

- 1		VIDEO Signal				
-		CHROMA	Y	Y/CHROMA		
R	EC	-	<b>→&gt;</b>	→>>>		
F	В	$\Rightarrow$	➾	⊏⋙		









< TRANSISTOR >

Q101 8-729-101-07 2SB798-DL

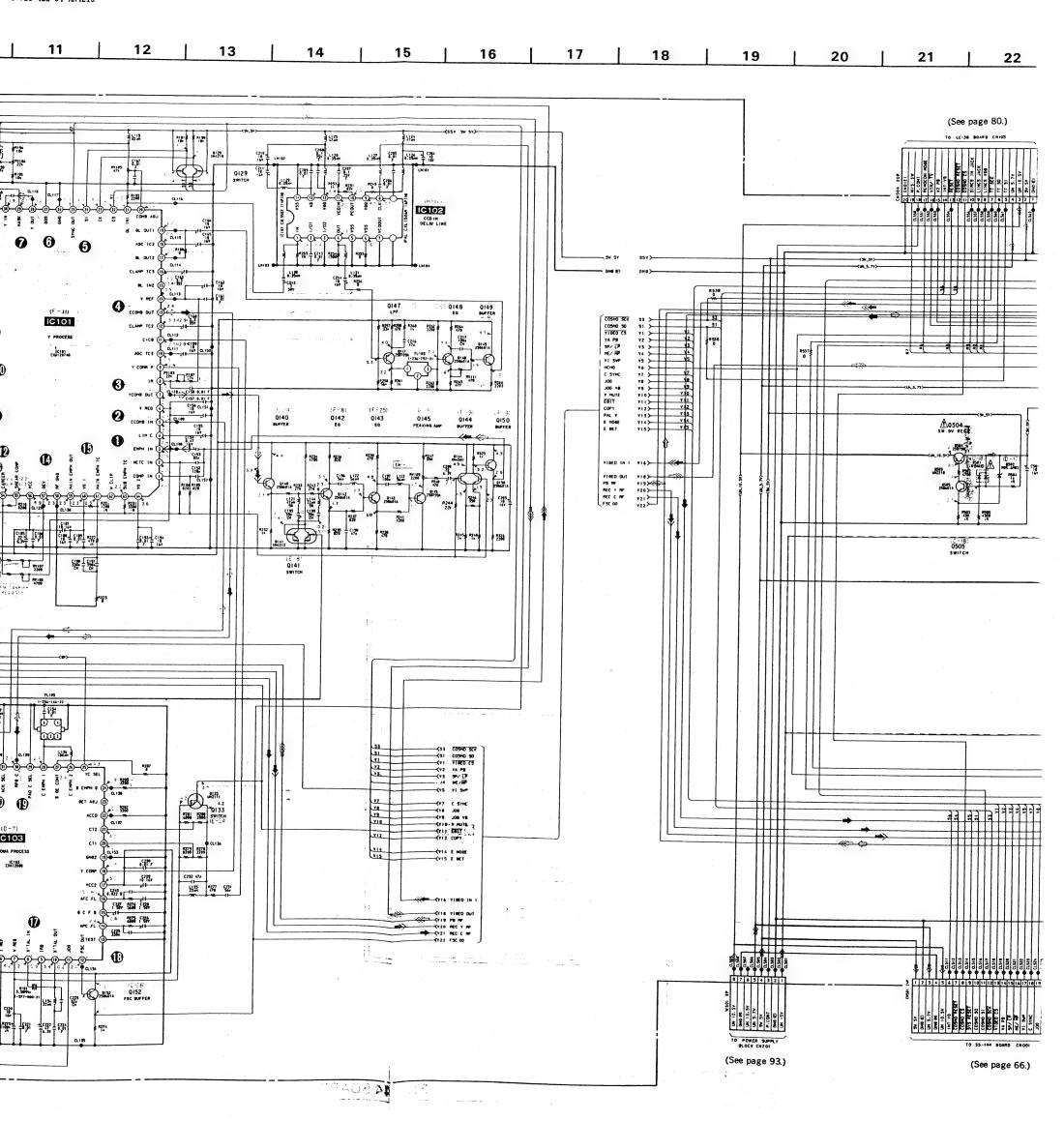
Q129 8-729-403-24 XN4210

Q150 8-729-422-27 2SD601A-Q

< DIODE >

D101 8-719-800-76 1SS226

8-729-422-27 2SD601A-Q 8-729-420-12 XN4213 8-729-422-27 2SD601A-Q 8-729-421-19 UN2213 8-729-422-36 2SB709A-Q 8-729-422-27 2SD601A-Q 8-729-424-08 UN2111 8-729-101-07 2SB798-DL 8-729-422-27 2SD601A-Q 8-729-402-84 XN4601 8-729-402-84 XN4601 8-729-422-27 2SD601A-Q 8-729-102-81 XN4501 8-729-421-90 XN4113 8-729-902-XX UN2215 8-729-422-54 XN4215



12 23 13 21 22 14 15 16 17 18 19 | 20 (See page 80.) 部 植野草果 IC102 CCD IN C142 Q147 (H-25) 23/6 C 23/7 C 23/7 C 23/7 C 24/7 C 24 2814914 RUS NUMBER Q143 E0 (1-8) 0142 E0 G: 3: Q145 PEAKING AMP Q140 BUFFER 2014 A 1914 A 19 \$127 1123 AV109 2200 123 2200 2 985 RS03 430 :H 1035 1035 1035 1035 1035 1035 Q141 SWITCH 0133 0133 0133 0133 0133 SWITCH √V7 C SYNC

✓V8 JOG

✓V9 JOG V8

✓V10 V MUTE

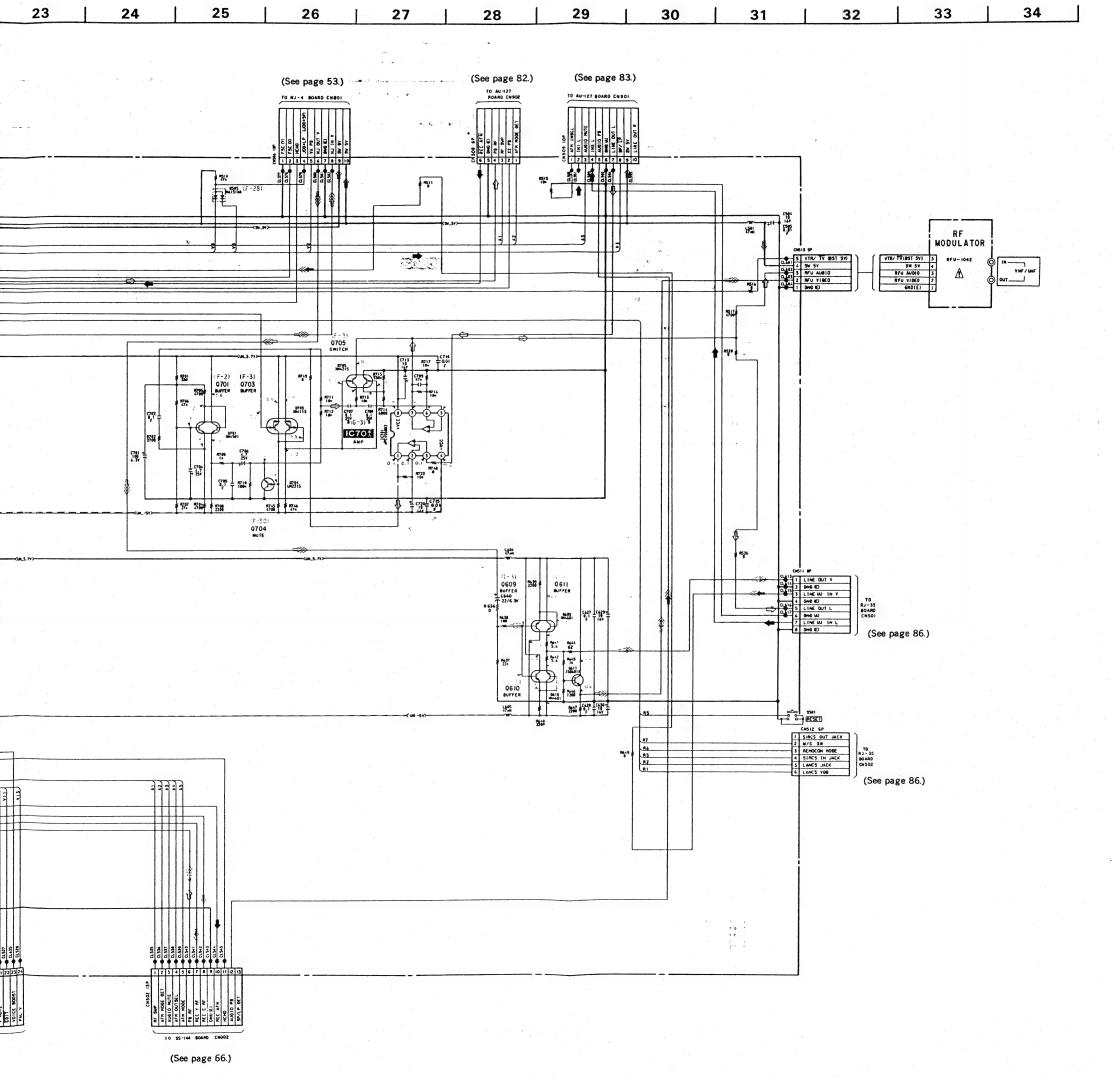
✓V11 EGIT

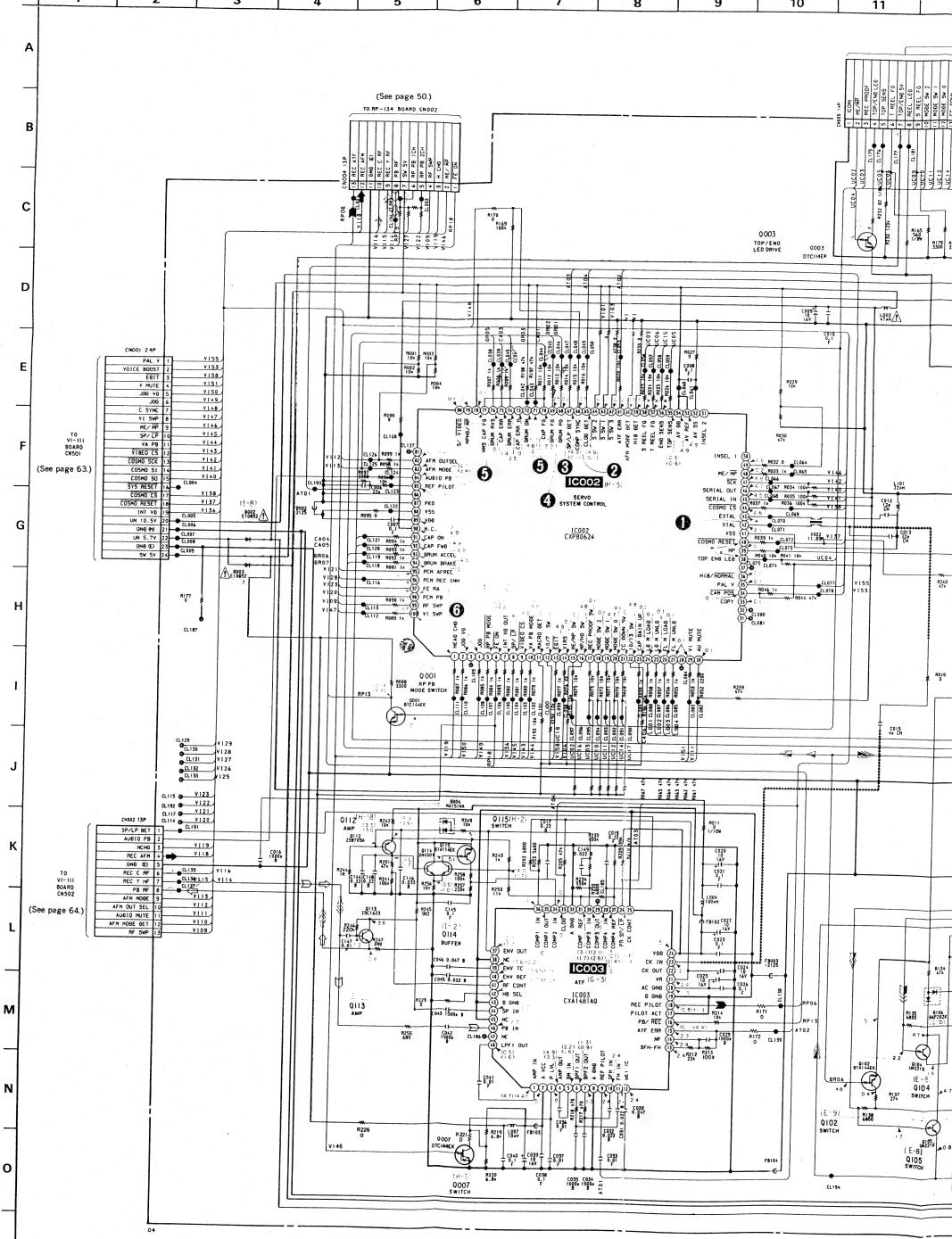
✓V12 COPY V12 3523 5528 (229 18 167 C25 Fig. 47% Fig. J 👸 )2586814 Q152 FSC BUFFER (See page 93.) (See page 66.)

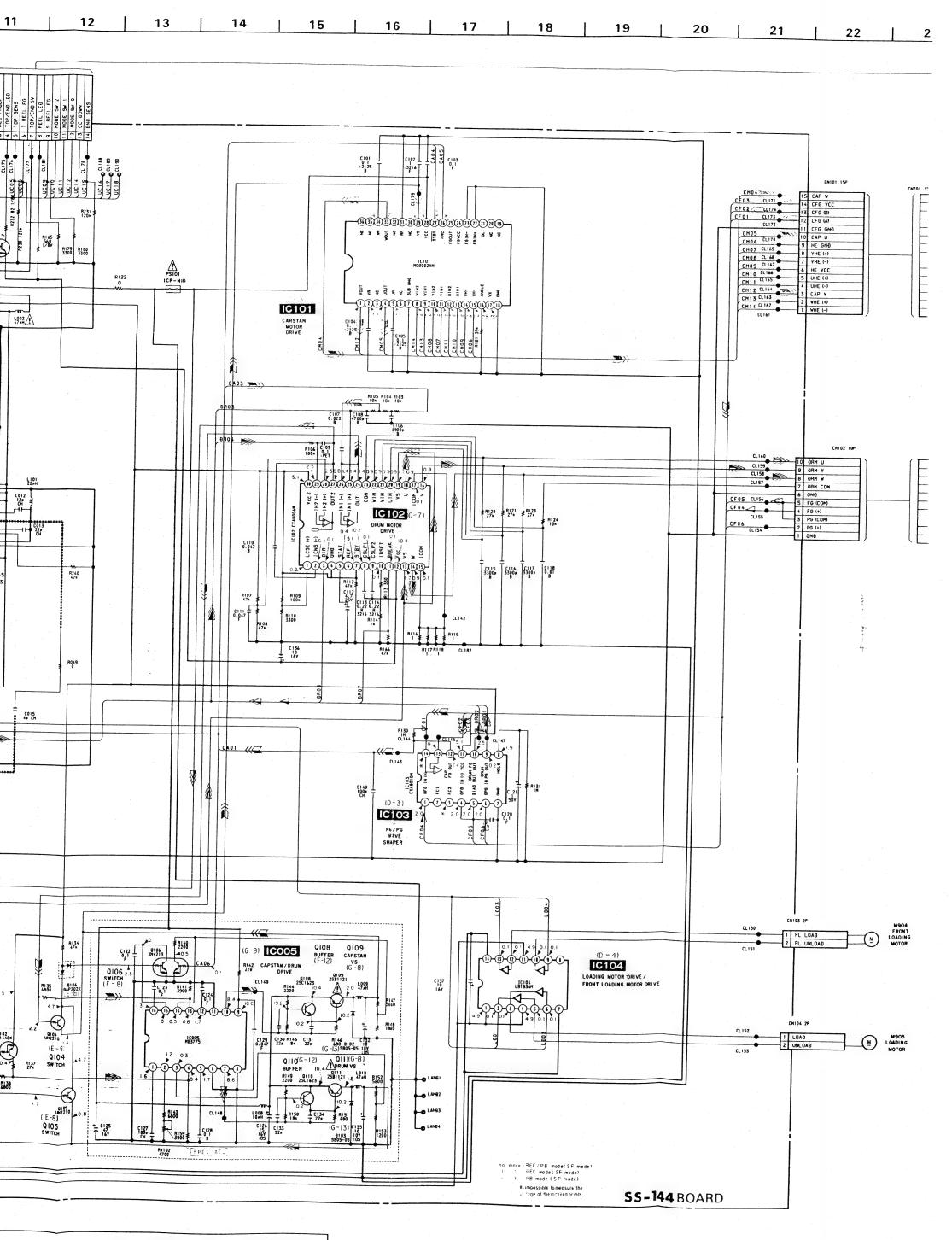
Note:
The components identified by mark or dotted line with mark recritical for safety.
Replace only with part number specified.

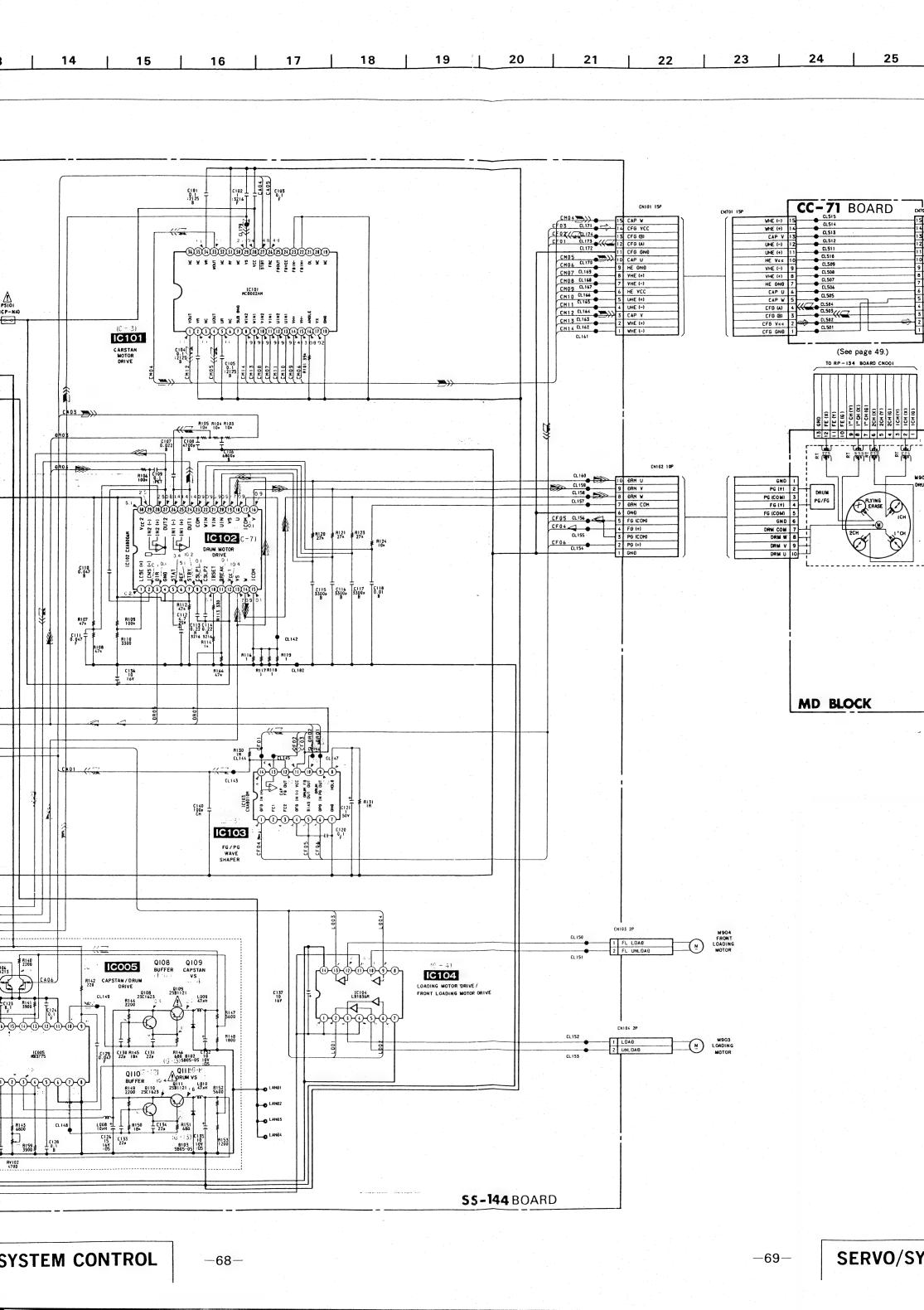
Note:
Les composants identifiés par une marque \( \frac{\Lambda}{\text{sont}} \) sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

orginal paris			
	REC	REC/PB	РВ
Ref.signal	<b>&gt;</b>	<b>&gt;</b>	$\Sigma$

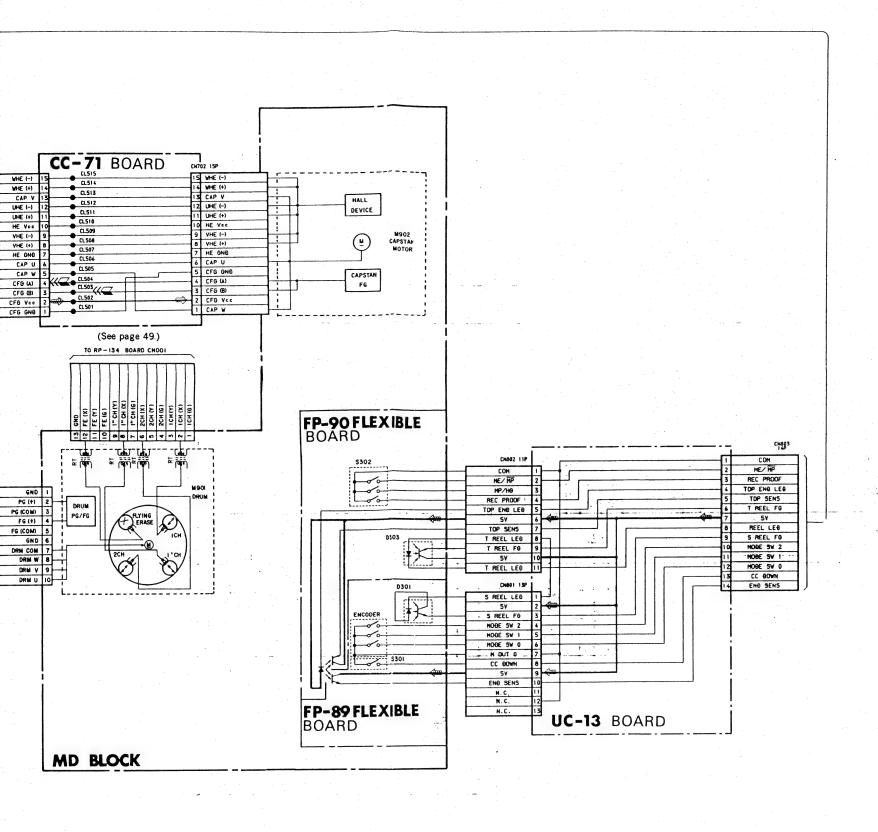








32 24 25 26 27 29 30 31 28





	1			AUDIO
	0.14.5434		1 0 14 000	Signal
REC	>	-	·****	-
РВ	100	- (>	ಚರಿತ್ರ	$\Rightarrow$

# • Signal path

REC	REC/PB	РВ			
	B. Cong.				
	Ž				
	F=15 <sup>-1</sup>				
	No.				
<b>26</b>	Hille,				
	4.5 \				
<b>&gt;</b>	<b>&gt;</b>	$\supset$			

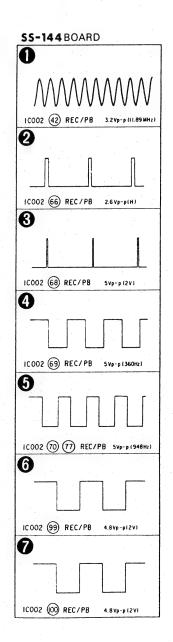
Note: Note:
The components identified by mark \( \frac{\hat{\Lambda}}{\text{or}} \) or dotted line with mark \( \frac{\Lambda}{\text{or}} \)
are critical for safety.
Replace only with part number specified.

Note: note:

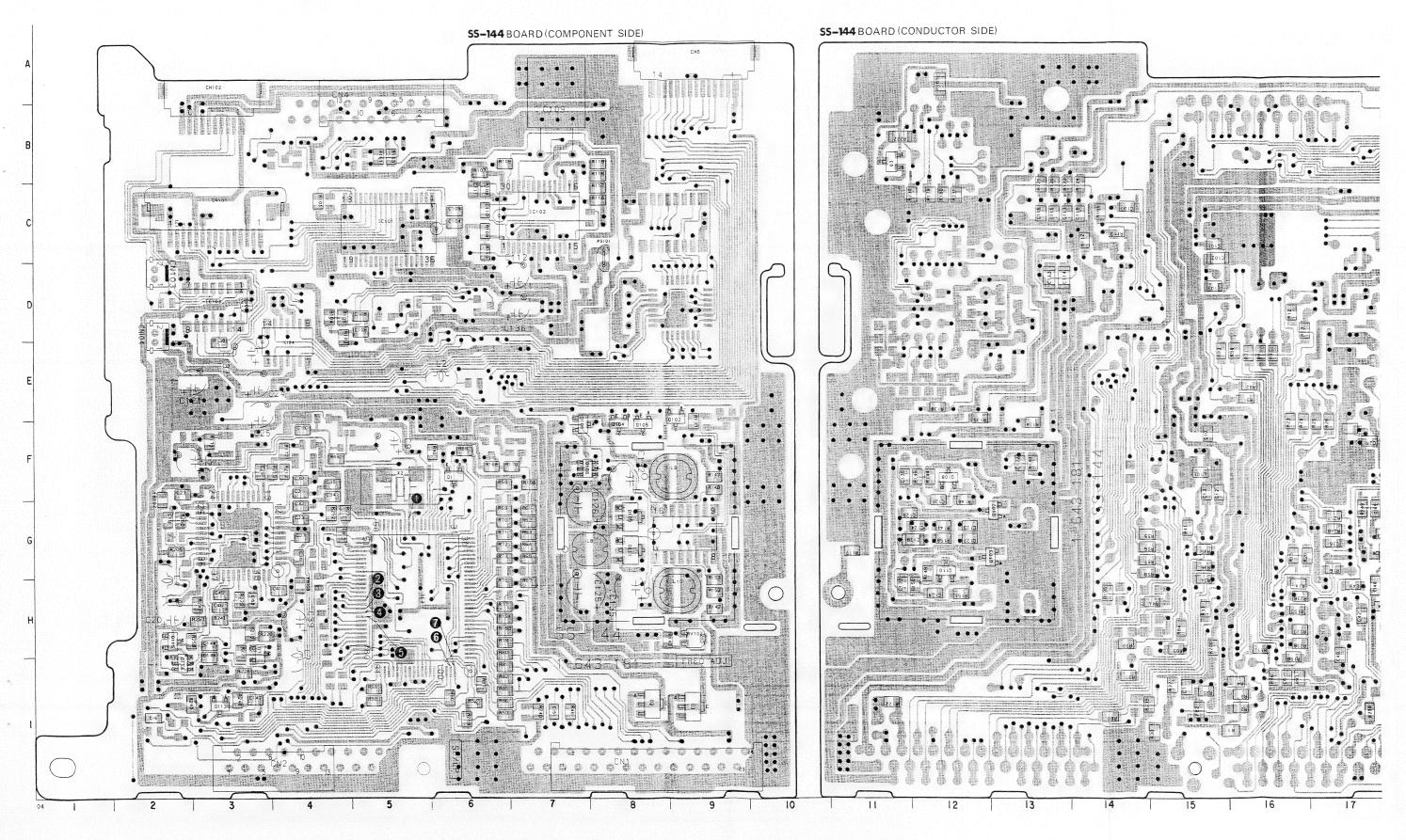
Note:

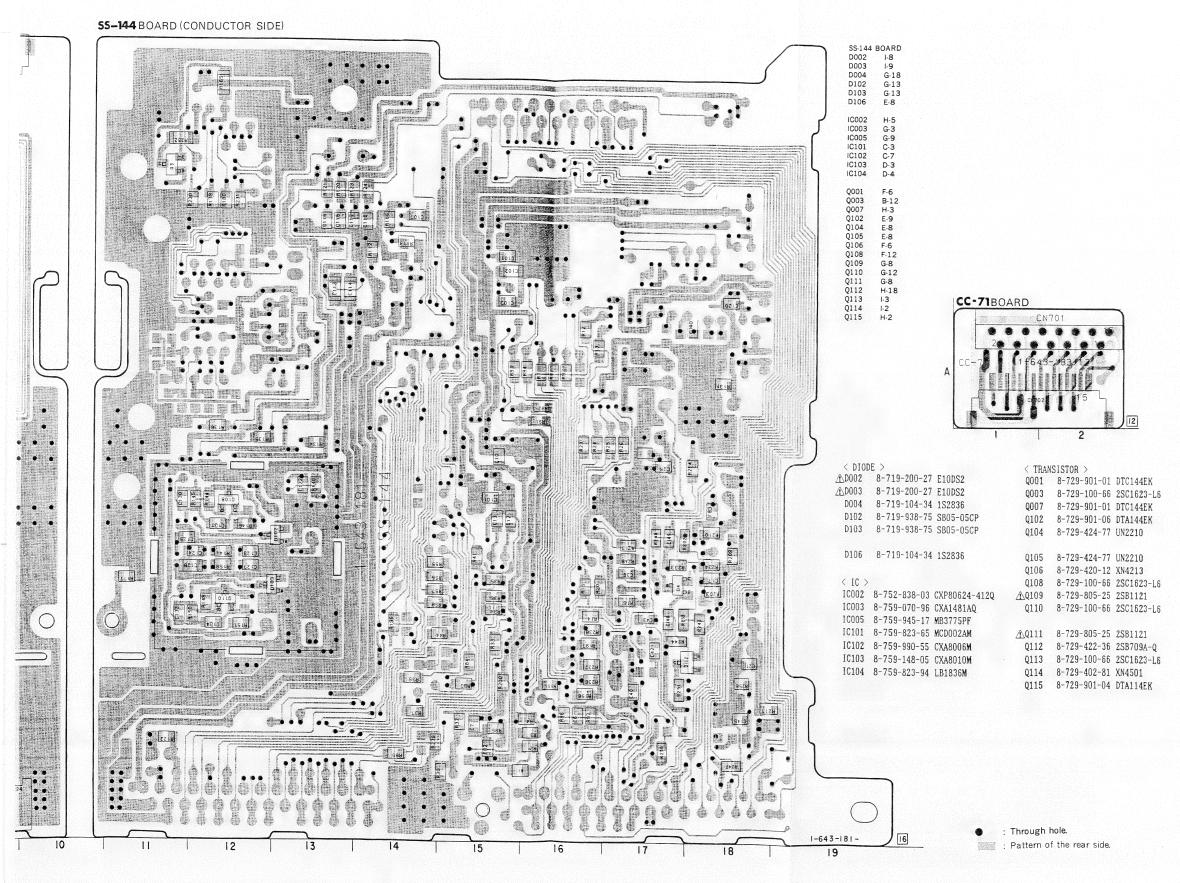
I dentifiés par une marque A sont critiques pour la sécurité.

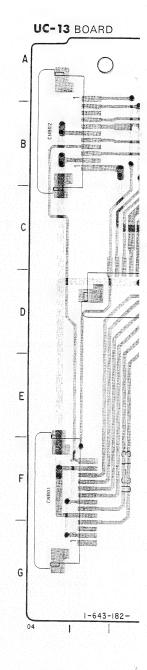
Ne les remplacer que par une pièce portant le numéro spécifié.

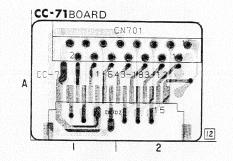


0

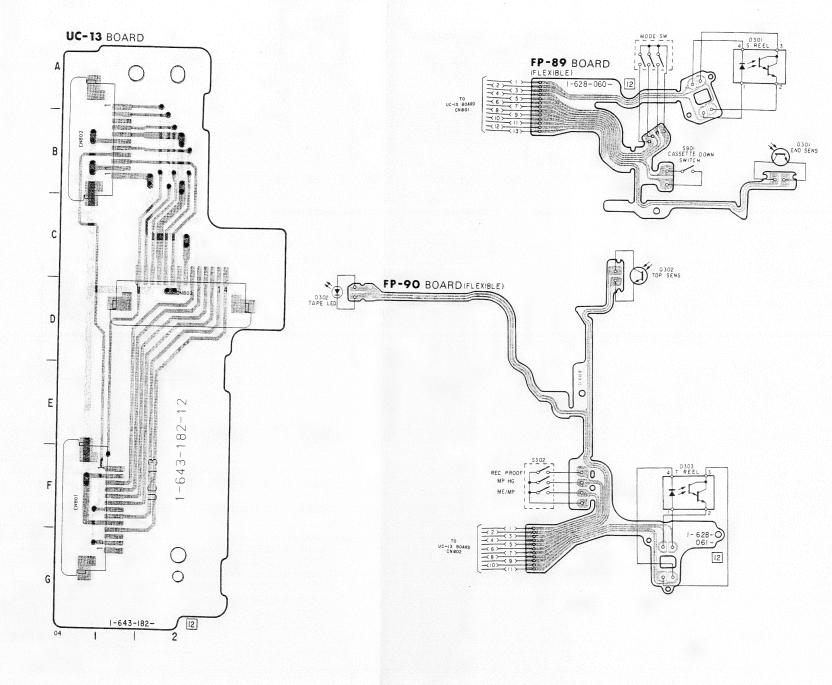












• : Through hole.

-73-

< DIODE > D301 8-719-820-44 TLP907-0 (SONY2)

Q301 8-729-906-48 EE-TP109

D302 8-719-026-04 GL-453JS D303 8-719-820-41 TLP907-0 (SONY2)

< TRANSISTOR > Q302 8-729-906-48 EE-TP109

< TRANSISTOR >

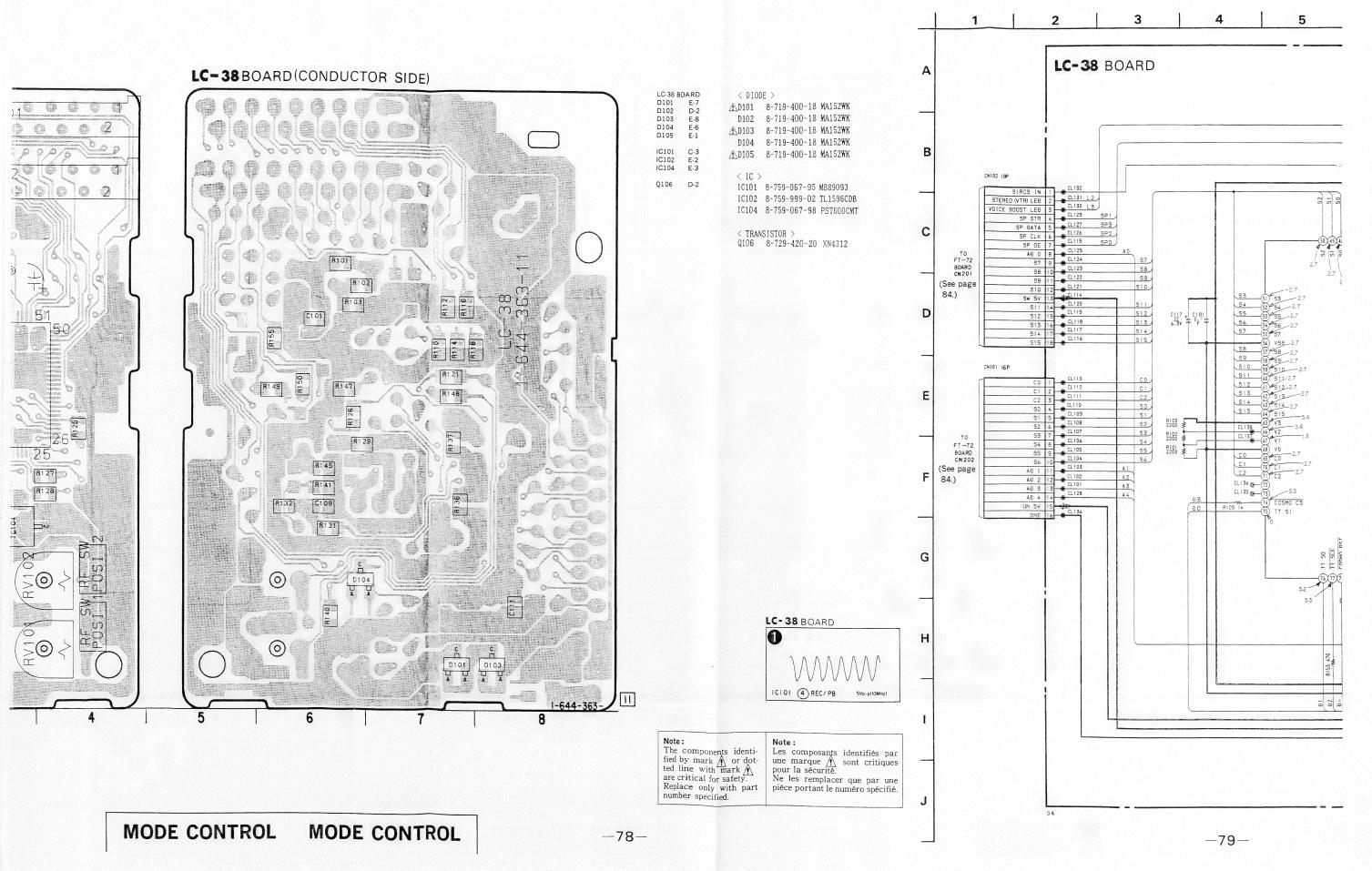
< DIODE >

LC D1 D1 D1 D1 ICI ICI ICI ICI ICI

-77-

# LC-38 (MODE CONTROL) SCHEMATIC DIAGRAM

-Ref. No. LC-38 BOARD: 3000 series-



**MODE CONTROL** 

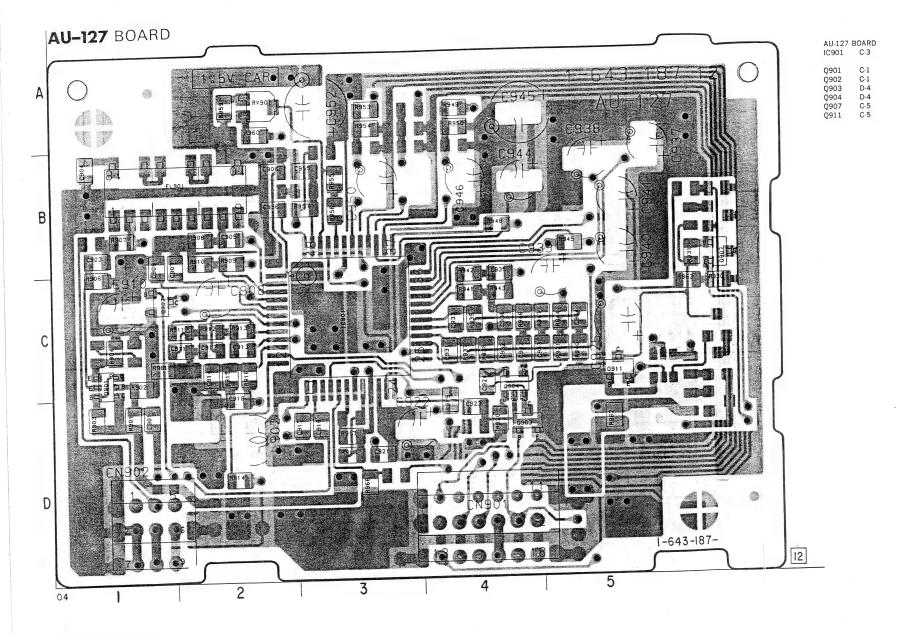
**-79-**

**MODE CONTROL** 

-80-

# AU-127 (AUDIO PROCESS) PRINTED WIRING BOARD

-Ref.No.AU-127 BOARD: 4000 series-



# Through hole.

IC901 8-752-003-79 CX20037A

< TRANSISTOR > Q901 8-729-402-19 XN6501

Q902 8-729-421-19 UN2213 Q903 8-729-421-19 UN2213

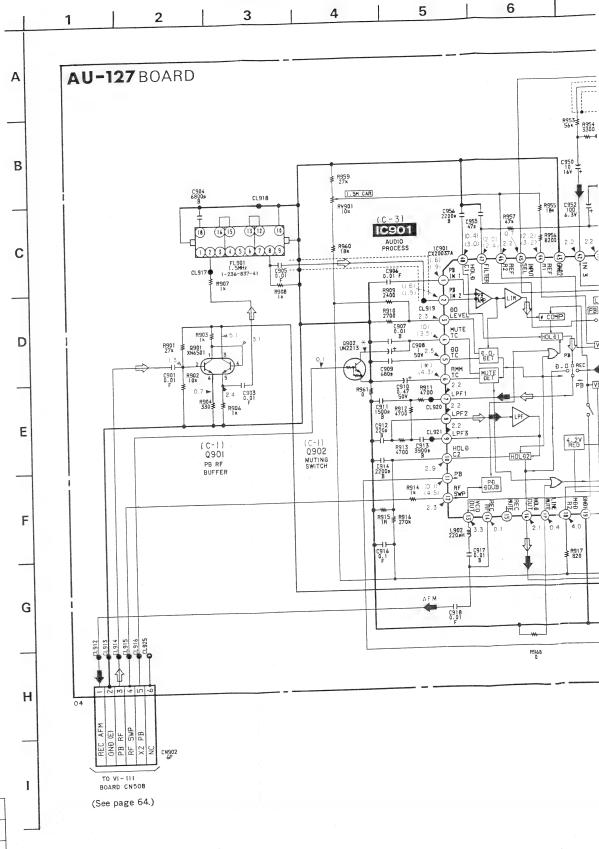
Q904 8-729-403-07 XN1213

Q907 8-729-202-38 2SC3326N-A

Q911 8-729-424-18 UN2113

# AU-127 (AUDIO PROCESS) SCHEMATIC DIAGRAM

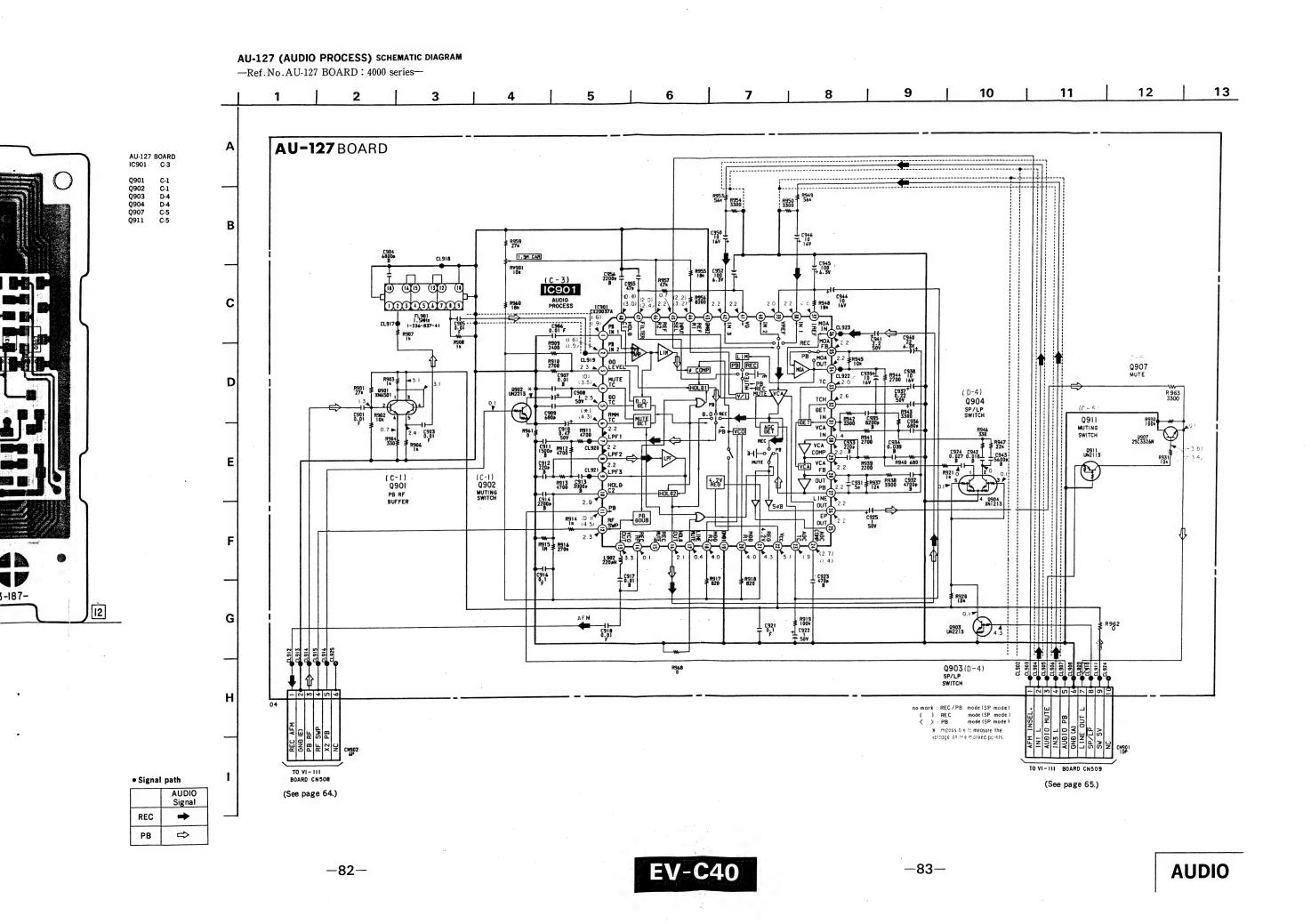
-Ref. No. AU-127 BOARD: 4000 series-

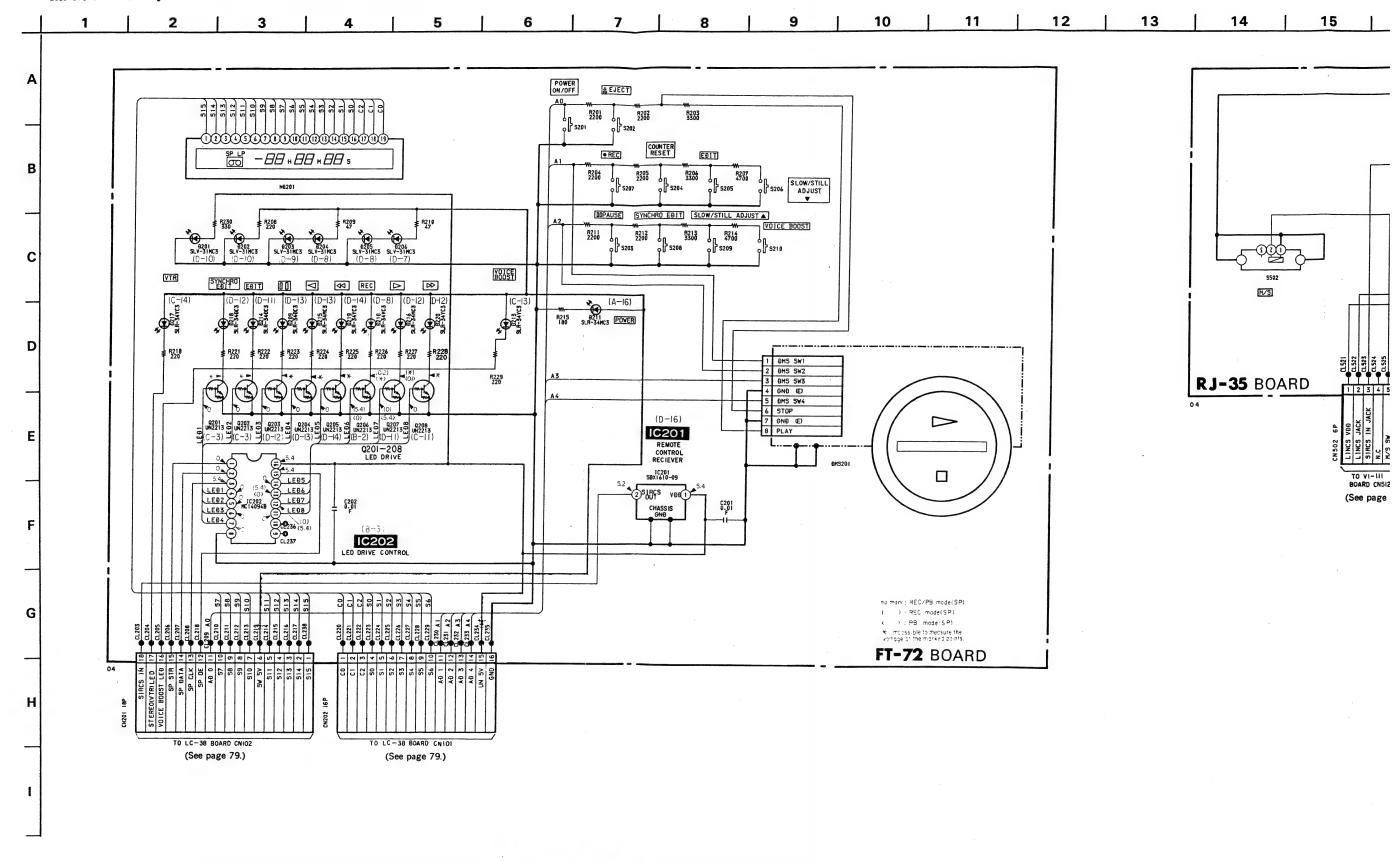


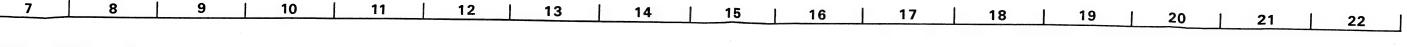
Signal path

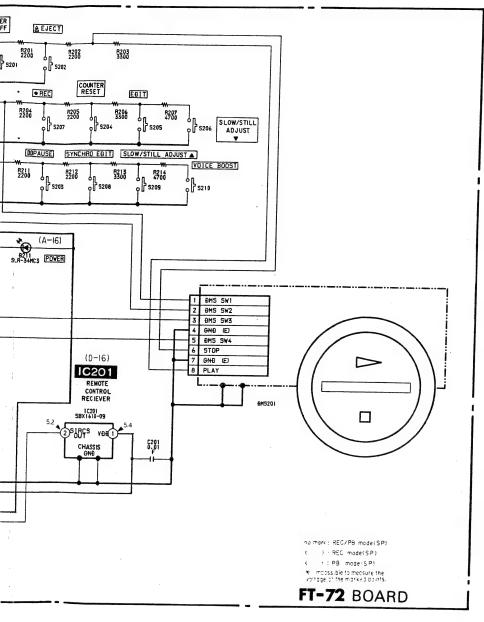
	AUDIO Signal
REC	->
РВ	$\Rightarrow$



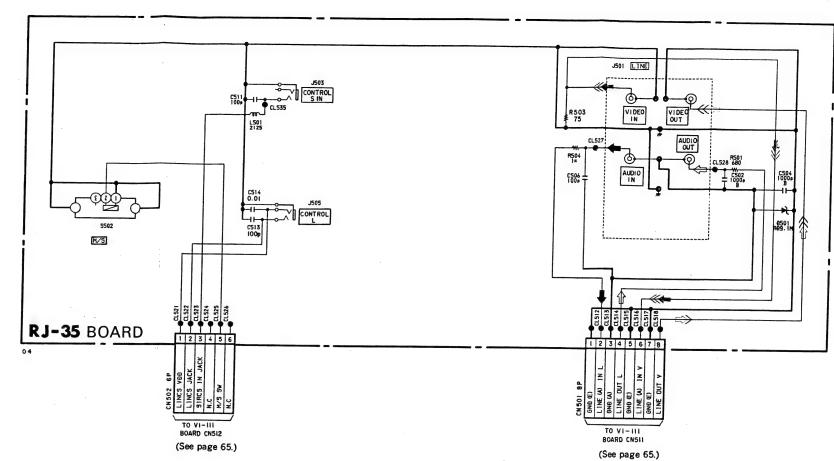








40

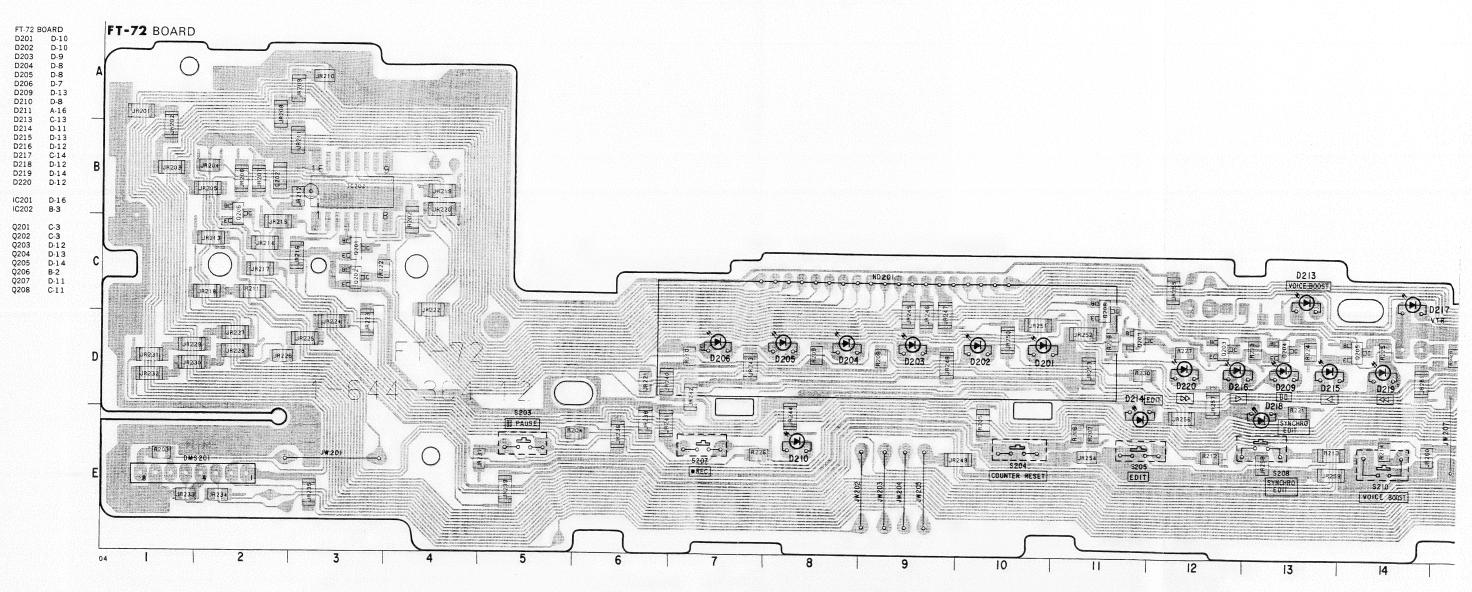


# Signal path

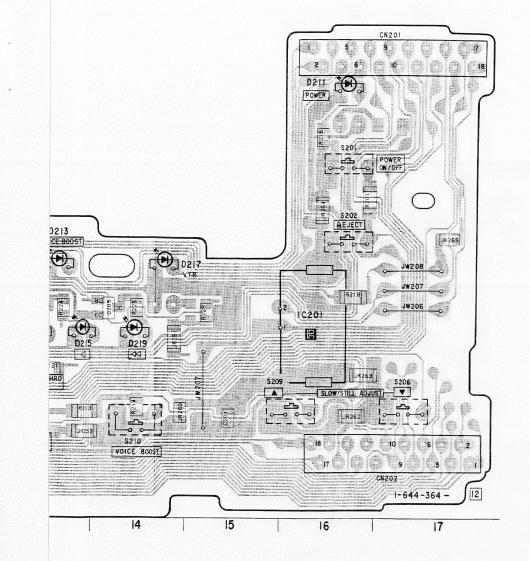
		VIDEO GE	rs'	AUDIO
	1		1 1 1 2 3 3 1 3	Signal
REC	p 4*	. 4.	er digital	<b>→</b>
PB	⇒	1:€>	#\$\$	⇔

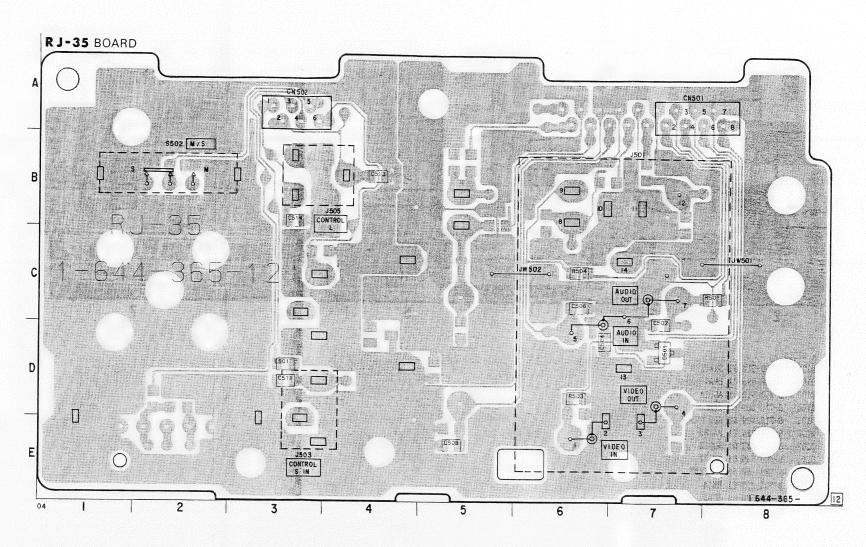
# FT-72 (FUNCTION SWITCH), RJ-35 (IN/OUT JACK) PRINTED WIRING BOARDS

-Ref. No. FT-72 and RJ-35 BOARD: 5000 series -



< DIODE	:>				
D201	8-719-028-26	SLV-31MC3-JK	D219	8-719-812-32	TLY123 (44)
D202	8-719-028-26	SLV-31MC3-JK	D220	8-719-812-32	TLY123 (DD)
D203	8-719-028-26	SLV-31MC3-JK			
D204	8-719-028-26	SLV-31MC3-JK	< IC >	100	
D205	8-719-028-26	SLV-31MC3-JK	IC201	8-741-100-47	
			IC202	8-759-009-22	MC14094BF
D206	8-719-028-26	SLV-31MC3-JK			
D209	8-719-946-30	SLR34DC3 (II)	< TRANS	SISTOR >	
D210	8-719-940-99	SLR34VC3 (REC)	Q201	8-729-421-19	UN2213
D211	8-719-940-82	SLR34MC3 (POWER)	Q202	8-729-421-19	UN2213
D213	8-719-812-32	TLY123 (VOICE BOOST)	Q203	8-729-421-19	UN2213
			Q204	8-729-421-19	UN2213
D214	8-719-946-30	SLR34DC3 (EDIT)	Q205	8-729-421-19	UN2213
D215	8-719-940-82	SLR34MC3 (△)			
D216	8-719-940-82	SLR34MC3 (▷)	Q206	8-729-421-19	UN2213
D217	8-719-812-32	TLY123 (VTR)	Q207	8-729-421-19	UN2213
D218	8-719-946-30	SLR34DC3 (SYNCHRO EDIT)	Q208	8-729-421-19	UN2213



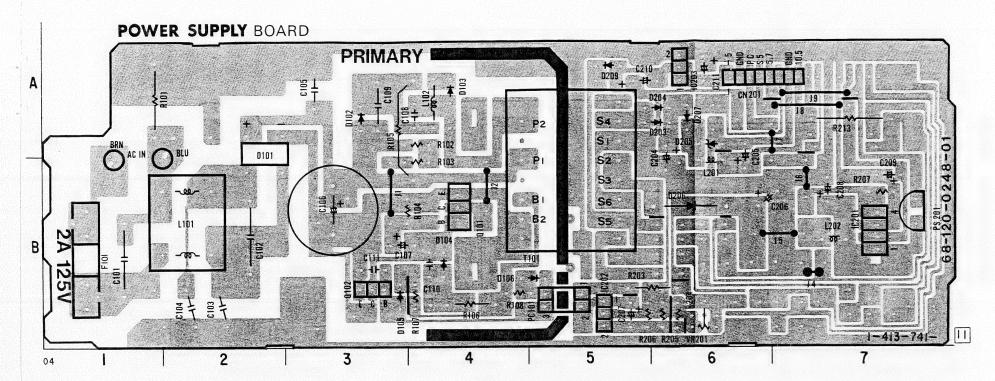


< DIODE > D501 8-719-106-44 RD9.1M-B2



# POWER SUPPLY (POWER) PRINTED WIRING BOARD (US, Canadian model)

-Ref. No. POWER SUPPLY BOARD: 6000 series-



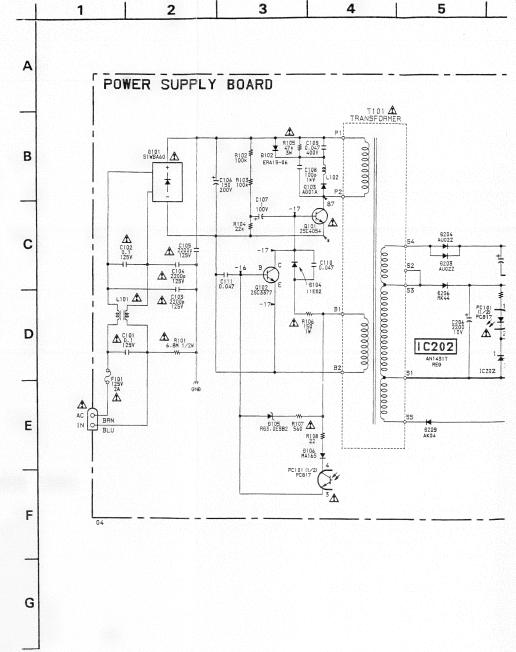
POWER :	SUPPLY BOARD	< DIODE	E >	
D101	A-2	<b>⚠</b> D101	9-900-511-01 5	S1WBA60
D102 D103	A-3 A-4	D102	9-902-095-01 B	ERA15-06
D103	B-4	D103	9-900-512-01	AG01A
D105	B-3	D104	8-719-200-82	11ES2
D106 D203	B-4 A-6	D105	8-719-109-63 F	
D204	A-6	D106	9-900-514-01 M	
D205 D206	A-6 B-6	D203	9-900-535-01	
D206	A-6	D204	9-900-535-01	
D209	A-5	D204	8-719-160-61 I	
IC201	B-7	D203	9-903-219-01	
IC202	B-5			
IC203	A-6	D207	9-900-535-01	
PC101	B-5	D208	8-719-114-47	
10101	53	D209	9-903-220-01	AKU4
Q101	B-4			
Q102	B-3	< IC >		
			9-903-221-01	
		IC202	8-759-420-19	
		IC203	9-903-223-01	TA79L005P
		< TRAN	SISTOR >	
		<b>∆</b> Q101	9-902-096-01	2504054
		Q102	9-900-517-01	

-91-

**POWER POWER** 

# POWER SUPPLY (POWER) SCHEMATIC DIAGRAM (US, Canadian model)

-Ref.No. POWER SUPPLY BOARD: 6000 series-



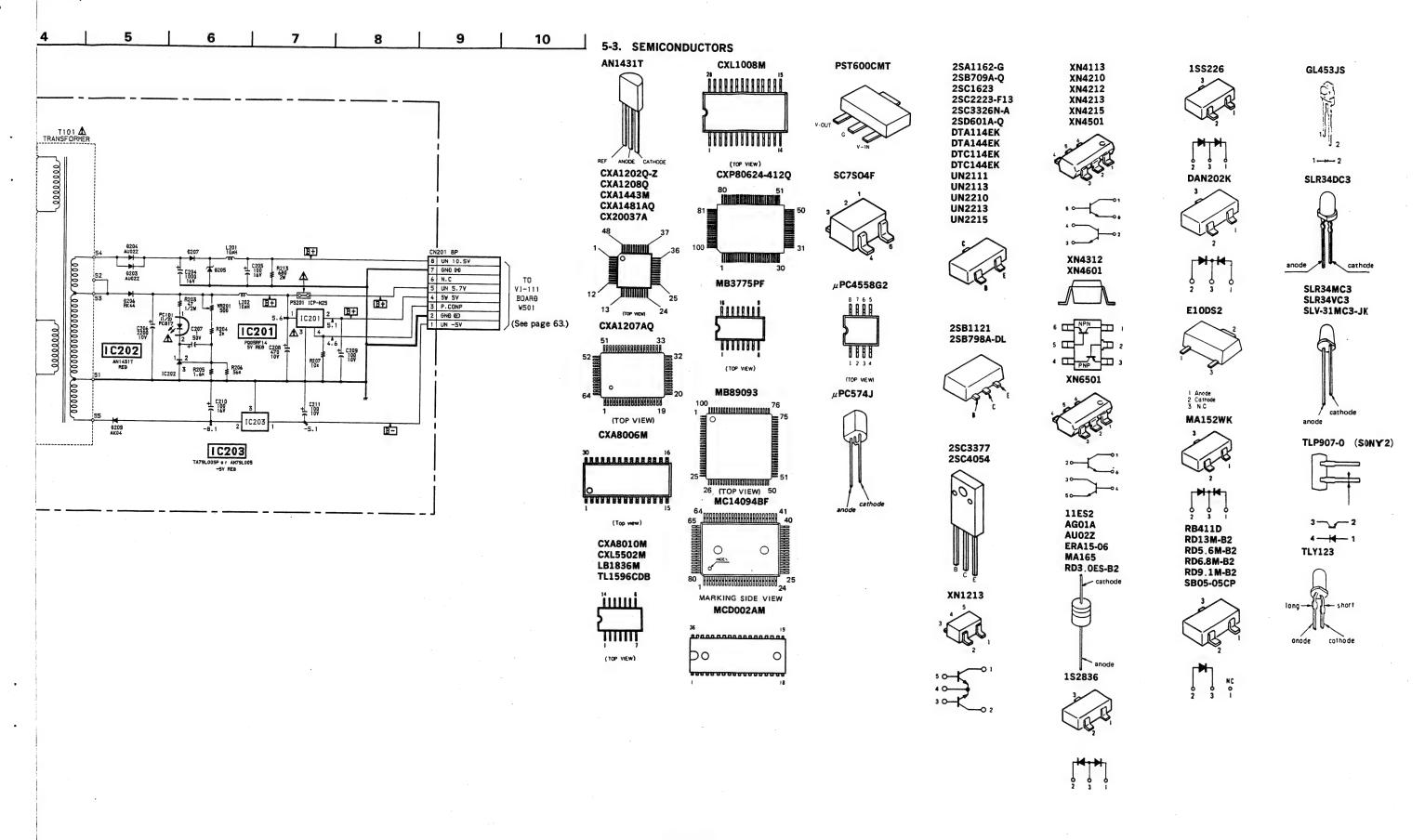
Note:
The components identified by mark \( \frac{\lambda}{\lambda} \) or dotted line with mark \( \frac{\lambda}{\lambda} \) are critical for safety.

Replace only with part number specified.

Les composants identifiés par une marque \(\frac{\Lambda}{\Lambda}\) sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

lian model)





# SECTION 6 EXPLODED VIEWS

## NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "\*" are not stocked since they are seldom required for routine service.
   Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts Example:

KNOB, BALANCE (WHITE)... (RED)

Parts Color Cabinet's Color

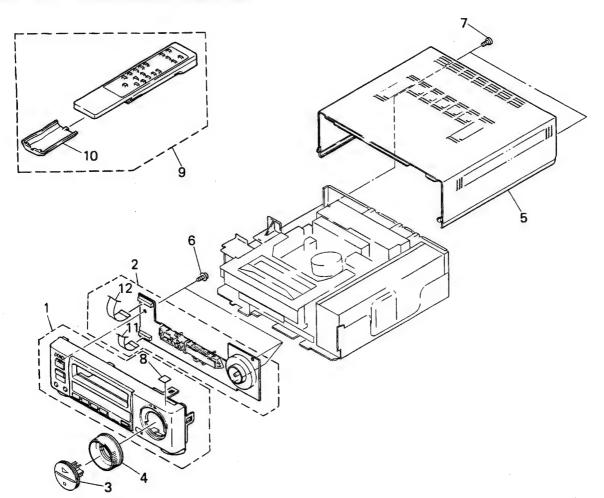
 Hardware (# mark) list is given in the last of this parts list.

The components identified by mark A or dotted line with mark.
A are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque A sont critiques pour la sécurité.

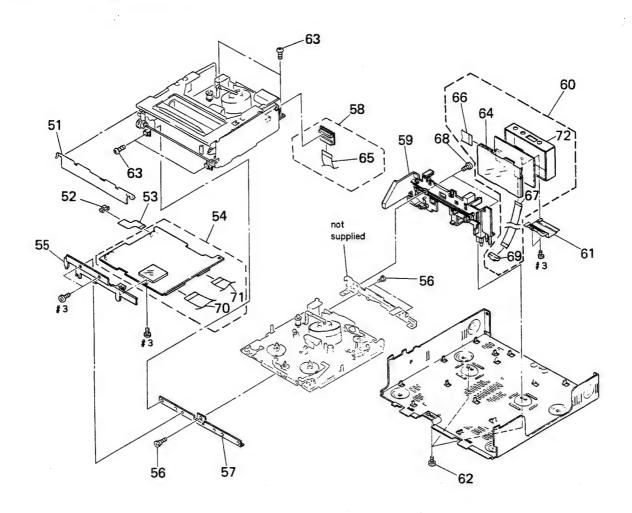
Ne les remplacer que par une pièce portant le numéro spécifié.

# 6-1. FRONT PANEL AND CASE ASSEMBLIES



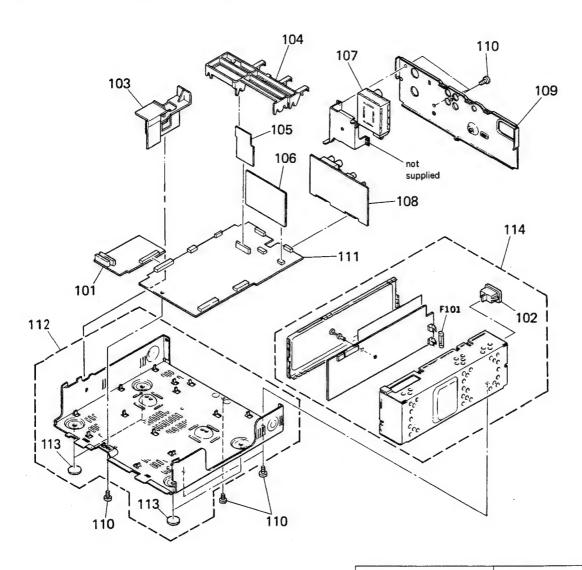
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1 + 2 3 4	A-7063-208-A X-3941-464-1	PANEL ASSY, FRONT A FT-72 BOARD, COMPLETE BUTTON ASSY, FUNCTION RING, SHUTTLE		7 * 8 9	3-703-713-41 1-693-135-11	SCREW, BV (3X10) RING STICKER, SONY SYMBOL (10) REMOTE COMMANDER (RMT-V124A) COVER. BATTERY	
* 5		CASE, UPPER		11	1-690-800-11	CABLE, FLAT (FFT-4) 16P	
6	3-669-480-21	1 + PTPWH 2		12	1-690-799-11	CABLE, FLAT (FFT-3) 18P	

# 6-2. CHASSIS FRAME ASSEMBLY



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-947-278-01	WINDOW, CASSETTE COMPARTMENT		62	3-948-500-01	SCREW, BV (3X10) RING	
52		CONNECTOR, FPC (TRANSLATION) 10	P	63	3-732-817-01	SCREW (2X4.5), TAPPING	
53		FP-503 FLEXIBLE BOARD		* 64	3-947-292-01	CASE (LID), SHIELD, RP	
* 54		SS-144 BOARD, COMPLETE		65	1-690-805-11	CABLE, FLAT (FCS-3) 15P	
* 55		FRAME (FRONT), MD		66	1-690-803-11	CABLE, FLAT (FRS-9) 13P	
56	3-732-816-01	SCREW. STEP		67	1-643-188-11	FP-502 FLEXIBLE BOARD	
* 57		BRACKET (FRONT)		68	3-719-381-01	SCREW (M2X4)	
58		CC-71 BOARD, COMPLETE		69	1-569-347-11	CONNECTOR, FPC (TRANSLATION)	13P
* 59	3-947-275-11			70	1-690-801-11	CABLE, FLAT (FSV-1) 24P	
60		RP-134 BOARD, COMPLETE		71	1-696-042-11	CABLE, FLAT (FSV-4) 13P	
* 61	3-947-276-01	PLATE (MD), GROUND		<b>•</b> 72	3-947-293-01	CASE (MAIN), SHIELD, RP	

# 6-3. MAIN BOARDS AND POWER BLOCK ASSEMBLIES

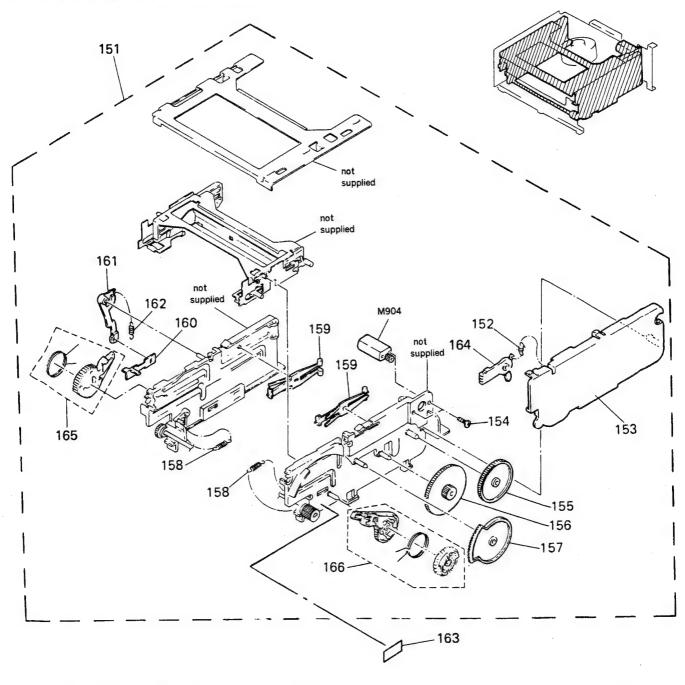


The components identified by mark ⚠ or dotted line with mark. ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ☆ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

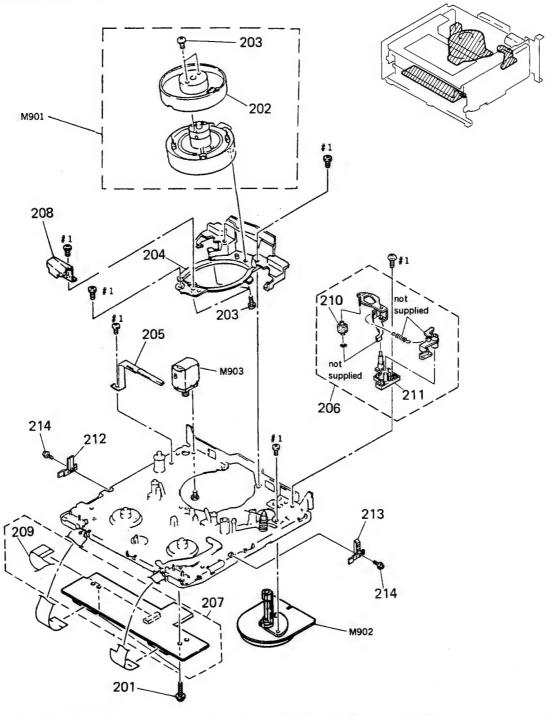
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 101 <b>1</b> 02	1-526-985-11	LC-38 BOARD, COMPLETE AC INLET (US, Canadian)		* 109 * 109	3-947-274-91	FRAME, REAR (US, Canadian) FRAME, REAR (PX)	
103 * 104 105		HOLDER, MAC HOLDER, PC BOARD NJ-4 BOARD, COMPLETE		110 + 111 + 112	A-7063-211-A	SCREW, BV (3X10) RING VI-111 BOARD, COMPLETE PLATE ASSY, BOTTOM	
106 107 + 108	1~466-646-11	AU-127 BOARD, COMPLETE MODULATOR, RF (RFU-1042) RJ-35 BOARD, COMPLETE		113 114 114 <b>1</b> F101	1-413-780-11	FOOT (FELT) POWER BLOCK (US, Canadian) POWER BLOCK (PX) FUSE, TIMER-LAG 2A 125V (US, C	anadian)

# 6-4. CASSETTE COMPARTMENT ASSEMBLY

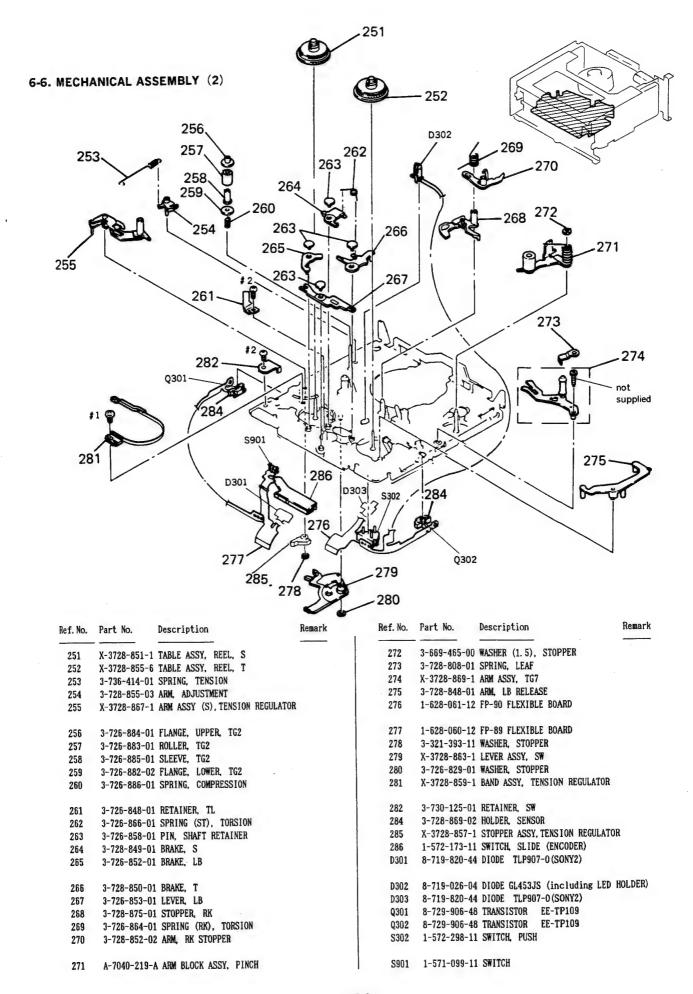


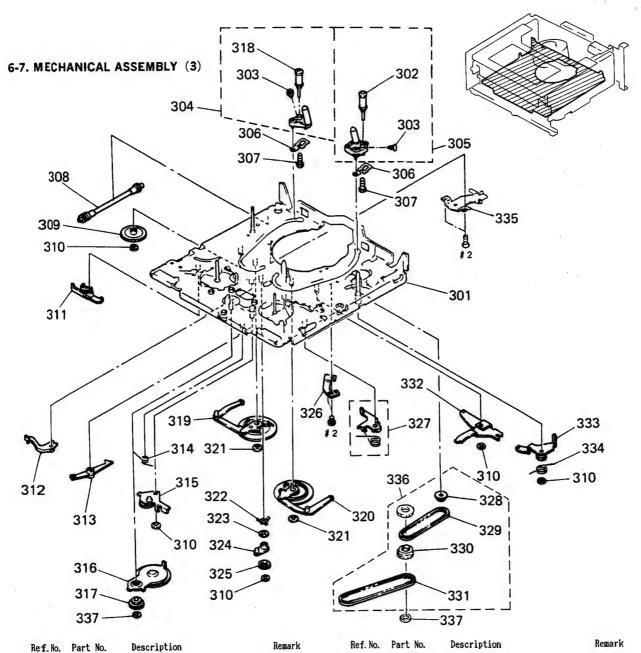
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 151 152 153 154 155	3-731-175-02 3-732-804-03 3-730-141-01	CASSETTE COMPARTMENT ASSY, FL SPRING, TENSION COVER, GEAR SCREW (PSW) (2X4) GEAR (B), DECELERATION		160 161 162 + 163 164	3-731-188-01 3-731-174-01 3-730-176-01	SLIDER, LOCK ARM LOCK, DRIVING SPRING, TENSION SHEET, MD LINK, SWITCHING, DOOR	
156 157 158 159	3-731-181-01 3-731-192-01 3-731-176-02	GEAR (A), DECELERATION GEAR, MIDWAY SPRING, TENSION HOLDER LOCK		165 166 M904	X-3731-109-2	ARM (LEFT) ASSY, DRIVING ARM (RIGHT) ASSY, DRIVING FL MOTOR ASSY	

# 6-5. MECHANICAL ASSEMBLY (1)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201 202 203 204 205	A-7049-531-A 3-686-493-01 X-3686-482-5	SCREW (M2X6), TAPPING, P3 DRUM ASSY, ROTARY (UPPER) SCREW (M2X5), P1 BASE ASSY, DRUM GROUND ASSY, SHAFT	(DGR-75B-R)	210 211 212 213 214	3-741-198-01 X-3726-867-1 X-3726-866-1	ROLLER ASSY, HC PLATE, HC PRISM (LEFT) ASSY PRISM (RIGHT) ASSY SCREW (M1. 4X1. 8), SPECIAL HEA	D
206 * 207 208 209	A-7063-182-A 3-728-868-01	ROLLER BLOCK ASSY, HC UC-13 BOARD, COMPLETE GUARD, GUIDE CABLE, FLAT (FUS-2) 14P		M901 M902 M903	8-835-331-31	A DRUM ASSY (DGU-75B-R)  MOTOR, DC U-22A (CAPSTAN)  MOTOR ASSY, THREADING (LOADIN	G)





110 21 1101	1 41 6 1101				
301	X-3728-862-1	CHASSIS ASSY, MECHANICAL	320	X-3728-843-1	GEAR (RIGHT) ASSY, DRIVE
302		ROLLER ASSY (U) (PLATING), GUIDE	321	3-669-465-00	WASHER (1.5), STOPPER
303		SCREW (M1. 4X2) (STEP), HEAD	322	3-726-867-01	SPRING, LEAF
304		COASTER (LEFT) BLOCK ASSY	323	3-701-436-21	WASHER, POLYEHTHYLENE
305		COASTER (RIGHT) BLOCK ASSY (M1P)	324	3-726-857-03	ARM, UL
306	3~736-485-01	SPRING, LEAF, COSTER	325	3-726-856-04	GEAR, UL
307		SCREW (M1. 4X4) (THREE LOCK)	* 326	3-726-805-01	REINFORCEMENT (TT)
308	X-3940-276-2	WORM ASSY	327	X-3726-808-3	BRAKE ASSY, TS
309	3-744-109-01		328	X-3726-805-1	GEAR ASSY, JOINT
310	3-726-829-01	WASHER, STOPPER	329	3-728-866-11	BELT (S), TIMING
311	3-728-842-01	LEVER, EJECT	330	3-741-196-02	PULLEY (LOWER), BELT MIDWAY
312	3-728-851-01		331	3-741-197-01	BELT (L), TIMING
313		ARM, BRAKE RELEASE	332	3-941-322-01	LEVER, LOADING
314		SPRING (LB), TORSION	333	X-3940-279-1	ARM ASSY, PINCH SUB
315	•	GEAR BLOCK ASSY (N), LB	334	3-726-895-01	SPRING
316	X-3728-866-1	GEAR ASSY, RK	335	X-3940-278-1	REINFORCEMENT (SS) ASSY
317		GEAR ASSY, RC	336	X-3726-813-4	4 PULLEY (UPPER) ASSY, MIDWAY
318		ROLLER ASSY ((U)-NB), GUIDE	337	3-321-393-11	WASHER, STOPPER
319		GEAR (LEFT) ASSY, DRIVE			

## **AU-127**

# SECTION 7 ELECTRICAL PARTS LIST

#### NOTE .

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
   All resistors are in ohms.
   METAL:Metal-film resistor.
   METAL OXIDE: Metal oxide-film resistor.
   F:nonflammable
- Items marked "\*" are not stocked since they are seldom required for routine service.
   Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
   In each case, u: μ, for example: uA..: μA. uPA.: μPA.

uPB..: μPB.. uPC..: μPC.. uPD..: μPD.

• CAPACITORS uF: μF

uH: µH

COILS

When indicating parts by reference number, please include the board.

The components identified by mark  $\triangle$  or dotted line with mark.  $\triangle$  are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

,						l					
	A-7063-094-A	AU-127 BOARD,	COMPLETE			C945	1-126-177-11	ELECT	100uF	20%	10 <b>V</b>
		*********				C946	1-126-157-11	ELECT	10uF	20%	16V
			(Ref.	No. 400	0 series)	C950	1-126-157-11	ELECT	10uF	20%	16V
			(0.00)			C952	1-126-177-11	ELECT	100uF	20%	10V
		< CAPACITOR >				C955	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C901	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	C956	1-164-161-11	CERAMIC CHIP	0. 0022uF	10%	100V
C903	1-163-031-11	CERAMIC CHIP	0. 01uF		50V						
C904	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V			< CONNECTOR :	>		
C905	1-163-031-11	CERAMIC CHIP	0. 01uF		50V						
		CERAMIC CHIP			50V	+ CN901	1-562-639-11	SOCKET, CONN	ECTOR 10P		
						+ CN902	1-562-637-11	SOCKET, CONN	ECTOR 6P		
C907	1-164-232-11	CERAMIC CHIP	0. 01uF		50V						
	1-126-301-11		1uF	20%	50V			< FILTER >			
C909		CERAMIC CHIP	680PF	5%	50V						
	1-124-465-00		0. 47uF	20%	50V	FL901	1-236-837-21	FILTER, BAND	PASS		
C911		CERAMIC CHIP		10%	50V						
0311	1 100 011 11	OLIUMITO CITT	0.001001	2010				< IC >			
C912	1-163-001-11	CERAMIC CHIP	220PF	10%	50V						
C913		CERAMIC CHIP		10%	50V	10901	8-752-003-79	IC CX20037	A		
C914		CERAMIC CHIP			100V	1					
C916		CERAMIC CHIP		104	25V	}		< COIL >			
C917		CERAMIC CHIP			50V						
6917	1-104-232-11	OERMITO OILL	0. 0141		001	L902	1-408-948-00	INDUCTOR	220uH		
C918	1_163_031_11	CERAMIC CHIP	0 01uF		50V						
C921		CERAMIC CHIP			25V			< TRANSISTOR	>		
C922	1-126-301-11		1uF	20%	50V						
C923		CERAMIC CHIP		10%	50V	Q901	8-729-402-19	TRANSISTOR	XN6501		
C924		CERAMIC CHIP		10%	25V	0902	8-729-421-19		UN2213		
0324	1-103-300-00	OLIUMITO OTTT	U. UZTUE	104	201	0903		TRANSISTOR	UN2213		
C925	1-126-301-11	FIFCT	1uF	20%	50V	0904	8-729-403-07		XN1213		
		CERAMIC CHIP	5PF	LUM	50V	0907		RANSISTOR	2SC3326N-	-A	
C931 C932		CERAMIC CHIP		5%	50V	200.	0 .20 202 0				
		CERAMIC CHIP	220PF	10%	50V	0911	8-729-424-18	TRANSISTOR	UN2113		
C933		CERAMIC CHIP		10%	25V	4011	0 740 444 10	, manazaran	0112120		
C934	1-102-367-13	CERAMIC CHIP	u. vasur	TOW	234			< RESISTOR >	>		
C935	1_163_030_00	CERAMIC CHIP	0. 0082uF	109	50V			· MADIDION /			
				5%	50V	R901	1-216-083-0	METAL CHIP	27K	5%	1/10W
C936	*	CERAMIC CHIP	0. 22uF	20%	50V	R902		METAL CHIP	10K	5%	1/10W
C937	1-124-464-11		0. 22ur 10uF	20%	16V	R903		METAL CHIP	1K	5%	1/10W
C938	1-126-157-11		10ur 10uF	20%	16V	R904		D METAL CHIP	330	5%	1/10W
C939	1-126-157-1	I EPEPI	TUUF	ZUA	104	R906		O METAL CHIP	1K	5%	1/10W
C040	1_194.090-1	FIRCT	22uF	20%	10V	1.550	010 0				
C940	1-124-638-1		2. 2uF	20%	50V	R907	1-216-049-0	O METAL CHIP	1K	5%	1/10W
C941	1-124-257-0			10%	50V	R908		O METAL CHIP	1K	5%	1/10W
C942		D CERAMIC CHIP			50V	R909		O METAL CITY O METAL GLAZE			1/10W
C943		O CERAMIC CHIP 1 ELECT	0. 0056uF 10uF	5% 20%	16V	R910		O METAL GLAZE	2. 7K		1/10W

AU-127 CC-71 FP-89 FP-90

ef. No.	Part No.	Description	1		Remark	Ref. No.	Part No.	Description Remark
R911	1-216-065-00	METAL CHIP	4. 7K	5%	1/10W		A-7063-089-A	CC-71 BOARD, COMPLETE
R912	1-216-065-00		4. 7K	5%	1/10W			******
R913	1-216-065-00		4. 7K		1/10W			(Ref. No. 2000 series)
R914	1-216-049-00		1K	5%	1/10W			
R915	1-216-121-00		1M	5%	1/10W		1-690-805-11	CABLE, FLAT (FCS-3) 15P
R916	1-216-107-00	METAL CHIP	270K	5%	1/10W			< CONNECTOR >
R917	1-216-047-00		820	5%	1/10W			
R918	1-216-047-00		820	5%	1/10W	+ CN701	1-562-880-21	CONNECOTR, CARD EDGE 15P
R919	1-216-097-00	METAL CHIP	100K	5%	1/10W	CN702	1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P
R920	1-216-073-00		10K	5%	1/10W	******	********	*************
R921	1-216-049-00	METAL CHIP	1K	5%	1/10W		1-628-060-12	FP-89 FLEXIBLE BOARD
R930	1-216-097-00	METAL CHIP	100K	5%	1/10W			*******
R931	1-216-073-00	METAL CHIP	10K	5%	1/10W			(Ref. No. 2000 series)
R937	1-216-075-00	METAL CHIP	12K	5%	1/10W			
R938	1-216-063-00	METAL CHIP	3. 9K	5%	1/10W		3-728-869-02	HOLDER SENSOR
R939	1-216-057-00	METAL CHIP	2. 2K	5%	1/10W			< D10DE >
R940	1-216-045-00	METAL CHIP	680	5%	1/10W			
R941	1-216-059-00	METAL CHIP	2. 7K	5%	1/10W	D301	8-719-820-44	DIODE TLP907-0 (SONY2)
R942	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W			
R943	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W			< TRANSISTOR >
R944	1-216-059-00	METAL CHIP	2. 7K	5%	1/10W	Q301	8-729-906-48	TRANSISTOR EE-TP109
R945	1-216-073-00	METAL CHIP	10K	5%	1/10W			
R946	1-216-037-00	METAL CHIP	330	5%	1/10W	İ		< SWITCH >
R947	1-216-081-00	METAL CHIP	22K	5%	1/10W			
R948	1-216-079-00	METAL CHIP	18K	5%	1/10W	S301 S303		SWITCH SLIDE (ENCODER) SWITCH (CC DOWN)
R949	1-216-091-00	METAL CHIP	56K	5%	1/10W	******	*****	************
R950	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W			
R953	1-216-091-00	METAL CHIP	56K	5%	1/10W	-	1-628-061-12	FP-90 FLEXIBLE BOARD
R954	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W			*********
R955	1-216-079-00	METAL CHIP	18K	5%	1/10W			(Ref. No. 2000 series)
R956	1-216-071-00	METAL CHIP	8. 2K	5%	1/10W		3-728-869-02	HOLDER SENSOR
R957	1-216-089-00	METAL CHIP	47K	5%	1/10W			
R959	1-216-083-00	METAL CHIP	27K	5%	1/10W			< DIODE >
R960	1-216-079-00	METAL CHIP	18K	5%	1/10W			
R961	1-216-295-00	METAL CHIP	0	5%	1/10W	D302 D303	8-719-026-04 8-719-820-41	DIODE GL-453JS (including LED HOLDER DIODE TLP907-0 (SONY2)
R962	1-216-295-00	METAL CHIP	0	5%	1/10W			, , , , , , , , , , , , , , , , , , , ,
R963	1-216-061-00				1/10W			< TRANSISTOR >
R968	1-216-295-00			5%	1/10W	2002	0 700 000 40	
		< VARIABLE	RESISTOR	>		Q302	8-729-906-48	TRANSISTOR EE-TP109
RV9D1	1-238-090-11	RES. ADJ.	CERMET	10K				< SWITCH >
	********				******	S302	1-572-298-11	SWITCH PUSH (REC PROOF/TAPE SELECT)

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description			Remar
+		FT-72 BOARD, COMPLETE				< TRANSISTOR	>		
		**************************************	( caries)	0201	8-729-421-19	TRANSISTOR	UN2213		
		(nei. no. 500	o series)	Q202	8-729-421-19		UN2213		
	4 000 700 44	CADLE FLAT (FFT 2) 10D		Q202	8-729-421-19		UN2213		
		CABLE, FLAT (FFT-3) 18P		Q204	8-729-421-19		UN2213		
		CABLE, FLAT (FFT-4) 16P			_		UN2213		
k k		HOLDER (CX), INDICATION TUBE ILLUMINATOR (CX)		Q205	8-729-421-19	TRANSISTUR	UN2213		
	0 010 000 01	1220minutes (on)	·	Q206	8-729-421-19	TRANSISTOR	UN2213		
		< CAPACITOR >		Q207	8-729-421-19	TRANSISTOR	UN2213		
		Commercial 2		Q208	8-729-421-19	TRANSISTOR	UN2213		
C201	1-163-031-11	CERAMIC CHIP 0.01uF	50V						
C202	1-163-059-00	CERAMIC CHIP 0.01uF 10%	50V			< RESISTOR >	•		
		< CONNECTOR >		R201	1-216-206-00	METAL GLAZE	2. 2K	5%	1/8W
				R202	1-216-206-00	METAL GLAZE	2. 2K	5%	1/8W
€ CN201	1-691-050-21	HOUSING, CONNECTOR 18P		R203	1-216-061-00	METAL CHIP	3. 3K	5%	1/10W
		HOUSING, CONNECTOR 16P		R204	1-216-057-00		2. 2K		1/10W
UNZUZ	1 909 999 11	mooting, commercial to		R205	1-216-206-00		2. 2K		1/8W
		< DIODE >		Page	1-216-061-00	METAL CUID	3. 3K	5%	1/10W
				R206			4. 7K		1/10W
D201	8-719-028-26			R207	1-216-065-00		220	5%	1/10W
D202	8-719-028-26			R208	1-216-033-00				
D203	8-719-028-26			R209	1-216-017-00		47	5%	1/10W
D204	8-719-028-26			R210	1-216-017-00	METAL CHIP	47	5%	1/10W
D205	8-719-028-26	DIODE SLV-31MC3-JK		R211	1-216-206-00	METAL CLATE	2. 2K	5%	1/8₩
2000	0.710.000.00	DIODE CLU 21MC2 IV		R212	1-216-057-00		2. 2K		1/10W
D206	8-719-028-26			R212	1-216-210-00		3. 3K		1/8W
D209	8-719-946-30			R214	1-216-065-00		4. 7K		1/10W
D210	8-719-940-99			R214	1-216-031-00		180	5%	1/10W
D211 D213	8-719-940-82 8-719-812-32			REIJ	1-210 031 00	MLIAL VIII	100	0.0	1/10#
DZ13	0-719-012-32	LED ILII23 (VOICE BOOSI)		R218	1-216-182-00	METAL GLAZE	220	5%	1/8W
D214	8-719-946-30	LED SLR34DC3 (EDIT)		R221	1-216-033-00		220	5%	1/10W
D214	8-719-940-82			R222	1-216-033-00		220	5%	1/10W
D216	8-719-940-82			R223	1-216-033-00		220	5%	1/10W
D217	8-719-812-32			R224	1-216-033-00		220	5%	1/10W
D217	8-719-946-30		IT)						-,
2210	0 110 010 00			R225	1-216-033-00	METAL CHIP	220	5%	1/10W
D219	8-719-812-32	LED TLY123 (44)		R226	1-216-033-00	METAL CHIP	220	5%	1/10W
D220	8-719-812-32			R227	1-216-033-00	METAL CHIP	220	5%	1/10W
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0 110 012 02			R228	1-216-033-00	METAL CHIP	220	5%	1/10W
		< SWITCH >		R229	1-216-033-00	METAL CHIP	220	5%	1/10W
DMS20	1 1-572-662-21	SWITCH, ROTARY		R230	1-216-037-00	METAL CHIP	330	5%	1/10W
		(PLAY/STOP/REVERSE/FORWARD)				< JAMPER RE	SISTOR >		
		< IC >				/ Other Dit 11D	ororon >		
				RJ201	1-216-296-0	METAL CHIP	0	5%	1/8W
IC20	8-741-100-47	I IC SBX1610-09		RJ202	2 1-216-296-0	METAL CHIP	0	5%	1/8W
IC20	2 8-759-009-22	2 IC MC14094BF		RJ203	3 1-216-296-0	METAL CHIP	0	5%	1/8W
					1-216-295-0		0	5%	1/10₩
		< FLUORESCENT INDICATOR >		RJ20	5 1-216-296-0	D METAL CHIP	0	5%	1/8W
พทวก	1 1-809-727-1	1 DISPLAY PANEL, LIQUID CRYSTA	AL.	RJ20	6 1-216-296-0	O METAL CHIP	0	5%	1/8W
HPEU	1 1 000 IEI 1.	. FILL BILL TIMES, BITCH VILLET		1	7 1-216-296-0		Ō	5%	1/8W
					8 1-216-296-0		0	5%	1/8W
					9 1-216-296-0		Ô	5%	1/8W
				1020	. 1 210 200 0	- warm our		0.4	-, -,

critiques pour la sécurité. Ne les remplacer que par une pi èce

portant le numéro spécifié.

et. No.	Part No.	Descri	ption			Remark	Ref. No.	Part No.	Description			Remark
RJ210	1-216-295-00	METAL	CHIP	0	5%	1/10W		1-216-296-00		0	5%	1/8W
	1-216-296-00			0	5%	1/8\	RJ260	1-216-295-00	METAL CHIP	0	5%	1/10W
	1-216-295-00			0	5%	1/10W	RJ261	1-216-296-00	METAL CHIP	0	5%	1/8W
	1-216-296-00			0	5%	1/8₩	RJ262	1-216-296-00	METAL CHIP	0	5%	1/8W
	1-216-296-00			0	5%	1/8W	RJ263	1-216-296-00	METAL CHIP	0	5%	1/8W
D 1915	1-216-296-00	METAI	CHIP	0	5%	1/8W	RJ264	1-216-296-00	METAL CHIP	0	5%	1/8W
	1-216-296-00			0	5%	1/8W		1-216-295-00		0	5%	1/10W
	1-216-296-00			0	5%	1/8W						
	1-216-296-00			0	5%	1/8W			< SWITCH >			
	1-216-296-00			0	5%	1/8W						
NJ219	1-210-290-00	MIC 17AL	UIII	U	J.B	1/04	S201	1-571-977-11	SWITCH, TACTIL	(POWE	R ON/OF	F)
D toon	1-216-296-00	METAI	CHID	0	5%	1/8W	S202		SWITCH, TACTIL			- /
	1-216-295-00			0	5%	1/10W	S203		SWITCH, TACTIL			
				0	5%	1/8W	S204		SWITCH, TACTIL			ET)
	1-216-296-00			0	5%	1/8W	S205		SWITCH, TACTIL			,
	1-216-296-00						5200	1 0/1 0// 11	5,1101, 1110111	(2211)	·	
nJZZ4	1-216-296-00	mc I AL	UHIP	0	5%	1/8W	S206	1-571-977-11	SWITCH, TACTIL	(\$1.09)	/STILL	ADJUST)
DIAGE	1 010 000 00	LETTERAT	CHIE		Ew	1 /OW	S200 S207		SWITCH, TACTIL		31100	
	1-216-296-00			0	5%	1/8W	S207 S208		SWITCH, TACTIL		HRO FOI	T)
	1-216-295-00			0	5%	1/10W			SWITCH, TACTIL			
	1-216-296-00			0	5%	1/8W	S209					
	1-216-296-00			0	5%	1/8W	S210		SWITCH, TACTIL			
RJ229	1-216-296-00	METAL	CHIP	0	5%	1/8W	******	******	+++++++++++	*****	******	*****
R 1230	1-216-296-00	METAL.	CHIP	0	5%	1/8W	+	A-7063-209-A	LC-38 BOARD, C	OMPLET	E	
	1-216-296-00			0	5%	1/8W			**********	*****	•	
	1-216-296-00			Õ	5%	1/8W				(Re	ef. No. 3	000 series
	1-216-295-00			0	5%	1/10W						
	1-216-295-00			0	5%	1/10W			< CAPACITOR >			
NJ234	1-210-233-00	WEINL	UIIIF	U	J.	1/10#			· ·			
	1-216-296-00			0	5%	1/8W	C101		CERAMIC CHIP			25V
RJ236	1-216-296-00	METAL	CHIP	0	5%	1/8W	C107		CERAMIC CHIP		0.04	25V
RJ237	1-216-295-00	METAL	CHIP	0	5%	1/10W	C108	1-126-157-11		10uF	209	
RJ238	1-216-296-00	METAL	CHIP	0	5%	1/8W	C109		CERAMIC CHIP			25V
RJ239	1-216-296-00	METAL	CHIP	0	5%	1/8W	C110	1-124-257-00	ELECT	2. 2uF	209	\$ 50V
RJ240	1-216-296-00	METAL	CHIP	0	5%	1/8W	C111	1-163-038-00	CERAMIC CHIP	0. 1uF		25V
RJ241	1-216-296-00	METAL	CHIP	0	5%	1/8W	C112	1-124-635-00	ELECT	220uF	209	6. 3V
RJ242	1-216-296-00	METAL	CHIP	0	5%	1/8W	C117	1-124-638-11	ELECT	22uF	209	10V
RJ243	1-216-296-00	METAL	CHIP	0	5%	1/8W						
RJ244	1-216-296-00	METAL	CHIP	0	5%	1/8W			< CONNECTOR >			
D 19.45	1-216-296-0	METAI	CHIP	0	5%	1/8W	CN101	1-569-933-11	HOUSING, CONN	ECTOR 1	6P	
	1-216-296-0			0	5%	1/8W			HOUSING, CONN			
	1-216-296-0			0	5%	1/8W			CONNECTOR (PL			
				0	5%	1/8W		2 222 000 1	,	,		
	1-216-296-00 1-216-296-00			0	5%	1/8W			< DIODE >			
B 1000	1 040 000 0	) Passare	CHIP	n	E*	1 /99	<b>△</b> D101	8-719-400-10	B DIODE MA152	WK		
	1-216-296-0			0	5%	1/8W	D102	8-719-400-18				
	1-216-296-0			0	5%	1/8₩		8-719-400-1				
	1-216-296-0			0	5%	1/8₩	<b>△</b> D103					
	1-216-296-0			0	5%	1/8W	D104	8-719-400-1				
RJ254	1-216-295-0	U METAL	. CHIP	0	5%	1/10W	<u> </u>	8-719-400-1	B DIODE MA152	πn		
	1-216-296-0			0	5%	1/8W			< IC >			
RJ256	1-216-296-0	O METAI	CHIP	. 0	5%	1/8W						
	1-216-296-0			0	5%	1/8W	IC101	8-759-067-9	5 IC MB89093			
RJ257				0	5%	1/10W	1 10109	8-759-999-0	Z IC TL1596CD	n.		

safety. Replace only with

part number specified.

# LC-38 NJ-4

The color of the	Ref. No.	Part No.	Descri	ption			Remark	Ref. No.	Part No.	Description			Remark
RIO1   1-216-057-00 METAL CRIP   2.2K SX   1/10W	IC104	8-759-067-98	IC P	ST600CM	IT			R155	1-216-295-00	METAL CHIP	0 !	5% 1,	/10W
RV102   1-228-994-00 RES, ADJ, METAL DIK			< TRAN	SISTOR	>					< VARIABLE RE	SISTOR >		
	Q106	8-729-420-20	TRANSI	STOR	XN4312								
No.   1-216-037-00 METAL CHIP   2.2K   5%   1/10W   1-579-175-11 VIBRATOR CERAMIC (10MHz)   1/10W			< RESI	STOR >						< VIRRATOR >			
1-216-037-00 METAL CHIP   2. 2K   5K   1/10W   1-216-073-00 METAL CHIP   10K   5K   1/10W   1-216-073-00 METAL CHIP   10K   5K   1/10W   1-216-073-00 METAL CHIP   10K   5K   1/10W   112   1-216-073-00 METAL CHIP   10K   5K   1/10W   113   1-216-073-00 METAL CHIP   10K   5K   1/10W   115   1-216-157-11 ELECT   100F   20K   16V   1	D101	1_216_057_00	METAI	CHIP	2 2K	5%	1/10W			( ) I Diamon )			
								X101	1-579-175-11	VIBRATOR, CER	AMIC (10M	Hz)	
1-216-073-00 METAL CRIP								******	********	******	******	*****	******
							•						
R110   -216-073-00 METAL CHIP   10K   5%   1/10W									A-7063-095-A	NJ-4 BOARD, C	OMPLETE		
	11103	1 210 070 00	IIID IXID	01111	2011		-,			********	*****		
	R110	1-216-073-00	METAL.	CHIP	10K	5%	1/10W				(Ref	. No. 100	O series)
R112													
R113   -216-073-00 METAL CHIP   10K   5K   1/10W   C802   1-163-103-00 CERAMIC CHIP   27PF   5K   50V   C803   1-153-035-00 CERAMIC CHIP   0.47uF   50V   C803   1-153-035-00 CERAMIC CHIP   0.47uF   50V   C803   1-163-035-00 CERAMIC CHIP   0.47uF   50V   C803   1-163-035-00 CERAMIC CHIP   0.47uF   50V   C803   1-163-035-00 CERAMIC CHIP   0.47uF   50V   C807   1-126-157-11 ELECT   10uF   20X   16V   C808   1-163-031-11 CERAMIC CHIP   0.10uF   50V   C808   1-163-031-11 CERAMIC CHIP   0.10uF   50V   C807   1-126-157-11 ELECT   10uF   20X   16V   C808   1-163-031-11 CERAMIC CHIP   0.10uF   50V   C809   1-126-157-11 ELECT   10uF   20X   16V   C809   1-126-157-11 ELECT   10uF   20X										< CAPACITOR >	•		
R114   1-216-073-00   METAL CHIP   10K   5X   1/10W   C802   1-163-130-30   CERAMIC CHIP   27PF   5X   50V   C802   1-163-03-00   CERAMIC CHIP   50V   50V   C802   1-163-03-00   CERAMIC CHIP   0.047uF   50V   C803   1-163-03-00   CERAMIC CHIP   0.047uF   50V   C804   1-126-073-00   CRAMIC CHIP   0.047uF   50V   C804   1-126-1073-00   CRAMIC CHIP   0.047uF   50V   C805   1-126-157-11   ELECT   10uF   20X   16V   C807   1-126													
CROP   1-153-030-00   CERAMIC CHIP   27PF   50V   50V   1216-073-00   METAL CHIP   10K   5X   1/10W   CROW   1-163-035-00   CERAMIC CHIP   0.047uF   50V   50V   118   1-216-073-00   METAL CHIP   10K   5X   1/10W   CROW   1-163-035-00   CERAMIC CHIP   0.047uF   50V   16V   1818   1-216-073-00   METAL CHIP   10K   5X   1/10W   CROW   1-163-031-11   CERAMIC CHIP   0.01uF   50V   16V							•	C801	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
R115   1-216-073-00 METAL CHIP   10K   5%   1/10W   C804   1-163-035-00 CERAMIC CHIP   0.047uF   50V   C804   1-163-035-00 CERAMIC CHIP   0.047uF   50V   C804   1-163-035-00 CERAMIC CHIP   0.047uF   50V   C805   1-126-157-11 ELECT   10uF   20%   16V   C807   1-126-157-11 ELECT   10uF   50V   C808   1-126-157-11 ELECT   10uF   50V   C808   1-126-157-11 ELECT   10uF   50V   C808   1-126-157-11 ELECT   10uF   50V   C809   1-126-157-11 ELECT   10uF   50V	R114	1.710 013 00	MILITAL	OIII	1011	0.4	1, 10.					5%	50V
R115 1-216-073-00 METAL CHIP 10K 5% 1/10W C805 1-126-157-11 ELECT 10uF 20% 16V R117 1-216-073-00 METAL CHIP 10K 5% 1/10W C805 1-126-157-11 ELECT 10uF 20% 16V R120 1-216-073-00 METAL CHIP 10K 5% 1/10W C806 1-163-031-11 CERAMIC CHIP 0.01uF 50V R121 1-216-073-00 METAL CHIP 10K 5% 1/10W C806 1-163-031-11 CERAMIC CHIP 0.01uF 50V R121 1-216-039-00 METAL CHIP 10K 5% 1/10W C806 1-163-031-11 CERAMIC CHIP 0.01uF 50V R121 1-216-049-00 METAL CHIP 1K 5% 1/10W C806 1-163-031-11 CERAMIC CHIP 0.01uF 50V R124 1-216-049-00 METAL CHIP 1K 5% 1/10W C810 1-163-031-11 CERAMIC CHIP 0.01uF 50V R126 1-216-073-00 METAL CHIP 1K 5% 1/10W C810 1-163-031-11 CERAMIC CHIP 0.01uF 50V R126 1-216-073-00 METAL CHIP 1K 5% 1/10W C810 1-163-031-11 CERAMIC CHIP 0.01uF 50V R126 1-216-073-00 METAL CHIP 1K 5% 1/10W C811 1-126-157-11 ELECT 10uF 20% 16V R126 1-216-073-00 METAL CHIP 1K 5% 1/10W C813 1-163-031-11 CERAMIC CHIP 0.01uF 50V R126 1-216-073-00 METAL CHIP 1K 5% 1/10W C815 1-183-127-00 CERAMIC CHIP 0.01uF 50V R126 1-216-073-00 METAL CHIP 1K 5% 1/10W C815 1-183-127-00 CERAMIC CHIP 20% 16V R129 1-216-073-00 METAL CHIP 1K 5% 1/10W C815 1-163-127-10 CERAMIC CHIP 20% 16V R131 1-216-073-00 METAL CHIP 1K 5% 1/10W C815 1-163-127-10 CERAMIC CHIP 20% 16V R131 1-216-073-00 METAL CHIP 1K 5% 1/10W C815 1-163-127-00 CERAMIC CHIP 20% 16V R131 1-216-073-00 METAL CHIP 1K 5% 1/10W C815 1-163-127-00 CERAMIC CHIP 20% 16V R131 1-216-073-00 METAL CHIP 0.0 5% 1/10W C815 1-163-031-11 CERAMIC CHIP 20% 16V R131 1-216-073-00 METAL CHIP 0.0 5% 1/10W C815 1-163-031-11 CERAMIC CHIP 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.	D11E	1_210_072_00	METAL	CHID	108	5%	1 /1 NW						50V
R117 1-216-073-00 METAL CHIP 10K 5% 1/10W R118 1-216-073-00 METAL CHIP 10K 5% 1/10W R119 1-216-073-00 METAL CHIP 10K 5% 1/10W R119 1-216-073-00 METAL CHIP 10K 5% 1/10W R120 1-216-073-00 METAL CHIP 10K 5% 1/10W R121 1-216-295-00 METAL CHIP 10K 5% 1/10W R122 1-216-049-00 METAL CHIP 11K 5% 1/10W R123 1-216-049-00 METAL CHIP 11K 5% 1/10W R124 1-216-049-00 METAL CHIP 11K 5% 1/10W R125 1-216-039-00 METAL CHIP 10K 5% 1/10W R126 1-216-073-00 METAL CHIP 10K 5% 1/10W R127 1-216-073-00 METAL CHIP 10K 5% 1/10W R128 1-216-073-00 METAL CHIP 10K 5% 1/10W R129 1-216-073-00 METAL CHIP 10K 5% 1/10W R120 1-216-073-00 METAL CHIP 10K 5% 1/10W R121 1-216-03-00 METAL CHIP 10K 5% 1/10W R122 1-216-049-00 METAL CHIP 10K 5% 1/10W R123 1-216-039-00 METAL CHIP 10K 5% 1/10W R129 1-216-039-00 METAL CHIP 10K 5% 1/10W R130 1-216-596-11 METAL GLAZE 2.7K 1% 1/10W R131 1-216-039-00 METAL CHIP 20X 5% 1/10W R133 1-216-039-00 METAL CHIP 20X 5% 1/10W R134 1-216-039-00 METAL CHIP 20X 5% 1/10W R135 1-216-039-00 METAL CHIP 20X 5% 1/10W R136 1-216-039-00 METAL CHIP 20X 5% 1/10W R137 1-216-039-00 METAL CHIP 20X 5% 1/10W R138 1-216-039-00 METAL CHIP 20X 5% 1/10W R139 1-216-039-00 METAL CHIP								1					50V
R118 1-216-073-00 METAL CHIP 10K 5% 1/10W C806 1-163-031-11 CERAMIC CHIP 0.01uF 50V C807 1-126-157-11 ELECT 10uF 20% 16V C808 1-163-031-11 CERAMIC CHIP 0.01uF 50V C809 1-126-157-11 ELECT 10uF 20% 16V C809 1-1												20%	16V
R119   1-216-073-00 METAL CHIP   10K   5%   1/10W   C806   1-163-031-11   CERAMIC CHIP   0.01   0.01   50V   C807   1-216-157-11   ELECT   10uF   20%   16V   C808   1-163-031-11   CERAMIC CHIP   0.01   16V   50V   C808   1-216-157-11   ELECT   10uF   20%   16V   C809   1-226-157-11   ELECT   10uF   20%   16V   C812   1-216-049-00   METAL CHIP   1K   5%   1/10W   C810   1-163-031-11   CERAMIC CHIP   0.01   0.01   EV   C812   1-226-049-00   METAL CHIP   1K   5%   1/10W   C811   1-126-157-11   ELECT   10uF   20%   16V   C812   1-216-073-00   METAL CHIP   10K   5%   1/10W   C813   1-163-031-11   CERAMIC CHIP   0.01   EV   C812   1-216-073-00   METAL CHIP   10K   5%   1/10W   C814   1-126-157-11   ELECT   10uF   20%   16V   C812   1-216-073-00   METAL CHIP   10K   5%   1/10W   C815   1-163-127-00   CERAMIC CHIP   270PF   5%   50V   C817   1-216-073-00   METAL CHIP   1K   5%   1/10W   C817   1-216-073-00   METAL CHIP   1K   5%   1/10W   C817   1-216-157-11   ELECT   10uF   20%   16V   C817   1-216-073-00   METAL CHIP   1K   5%   1/10W   C818   1-126-157-11   ELECT   10uF   20%   16V   C817   1-216-073-00   METAL CHIP   1K   5%   1/10W   C818   1-126-157-11   ELECT   10uF   20%   16V   C818   1-126-039-00   CERAMIC CHIP   0.10F   20%   16V   C818   1-126-039-00   CERAMIC CHIP   0.10F   20%   16V   C818   1-126-039-00   CERAMIC CHIP   0.10F   50V   C822   1-126-157-11   ELECT   10uF   20%   1								0000	1 120 100 11				
R120   1-216-073-00   METAL CHIP   10K   5%   1/10W   C808   1-18-157-11   ELECT   10uF   20%   16V   R121   1-216-295-00   METAL CHIP   1K   5%   1/10W   C809   1-126-157-11   ELECT   10uF   20%   16V   R122   1-216-049-00   METAL CHIP   1K   5%   1/10W   C810   1-183-031-11   CERAMIC CHIP   0.01uF   50V   C812   1-216-049-00   METAL CHIP   1K   5%   1/10W   C811   1-126-154-11   ELECT   10uF   20%   6.3V   C812   1-216-073-00   METAL CHIP   10K   5%   1/10W   C813   1-183-031-11   ELECT   10uF   20%   16V   C812   1-126-157-11   ELECT   10uF   20%   16V   C812   1-126-073-00   METAL CHIP   10K   5%   1/10W   C814   1-126-157-11   ELECT   10uF   20%   16V   C812   1-126-073-00   METAL CHIP   10K   5%   1/10W   C815   1-163-127-00   CERAMIC CHIP   270F   5%   50V   C817   1-216-073-00   METAL CHIP   10K   5%   1/10W   C815   1-163-127-00   CERAMIC CHIP   270F   5%   50V   C817   1-216-073-00   METAL CHIP   10K   5%   1/10W   C816   1-163-127-00   CERAMIC CHIP   270F   5%   50V   C817   1-216-157-11   ELECT   10uF   20%   16V   C819   1-126-157-11   ELECT   10uF   20%   10F   C819   1-126-157-11								C806	1~163-031-11	CERAMIC CHIP	0.01uF		50V
R120	KII9	1-210-073-00	MEIAL	CHIP	IUN	JA	1/10%					20%	16V
R121   1-216-295-00   METAL CHIP   0   5%   1/10W   C810   1-126-157-11   ELECT   10uf   20%   16V   50V   R122   1-216-049-00   METAL CHIP   1K   5%   1/10W   C810   1-163-031-11   CERAMIC CHIP   0.0 1 uf   50V   C812   1-126-157-11   ELECT   10uf   20%   6.3V   C813   1-126-157-11   ELECT	24.00	4 040 070 0	AFFEAT	CIVED	1017	Ew	1 /100						
R122 1-216-049-00 METAL CHIP 1K 5% 1/10W R123 1-216-049-00 METAL CHIP 1K 5% 1/10W R124 1-216-049-00 METAL CHIP 1K 5% 1/10W R125 1-216-073-00 METAL CHIP 10K 5% 1/10W R126 1-216-073-00 METAL CHIP 10K 5% 1/10W R127 1-216-073-00 METAL CHIP 10K 5% 1/10W R128 1-216-073-00 METAL CHIP 10K 5% 1/10W R129 1-216-073-00 METAL CHIP 10K 5% 1/10W R130 1-216-596-11 METAL GLAZE 2.7K 1% 1/10W R131 1-216-049-00 METAL CHIP 1K 5% 1/10W R131 1-216-049-00 METAL CHIP 2.2K 5% 1/10W R133 1-216-057-00 METAL CHIP 2.2K 5% 1/10W R135 1-216-59-00 METAL CHIP 0 5% 1/10W R136 1-216-295-00 METAL CHIP 0 5% 1/10W R137 1-216-295-00 METAL CHIP 0 5% 1/10W R138 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 0 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 0 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R140 1-216-113-00 METAL CHIP 10K 5% 1/10W R141 1-216-049-00 METAL CHIP 10K 5% 1/10W R145 1-216-049-00 METAL CHIP 10K 5% 1/10W R146 1-216-049-00 METAL CHIP 10K 5% 1/10W R147 1-216-049-00 METAL CHIP 10K 5% 1/10W R149 1-216-049-00 METAL CHIP 10K 5% 1/10W R150 1-26-049-00 METAL CHIP 10K 5% 1/10W R150 1-26-049-00 METAL CHIP 10K 5% 1/10W R							•					20%	16V
R123 1-216-049-00 METAL CHIP 1K 5% 1/10W  R124 1-216-049-00 METAL CHIP 1K 5% 1/10W  R125 1-216-073-00 METAL CHIP 10K 5% 1/10W  R126 1-216-073-00 METAL CHIP 10K 5% 1/10W  R127 1-216-073-00 METAL CHIP 10K 5% 1/10W  R128 1-216-049-00 METAL CHIP 10K 5% 1/10W  R129 1-216-073-00 METAL CHIP 10K 5% 1/10W  R129 1-216-073-00 METAL CHIP 10K 5% 1/10W  R130 1-216-596-11 METAL GLAZE 2. 7K 1% 1/10W  R131 1-216-049-00 METAL CHIP 10K 5% 1/10W  R131 1-216-049-00 METAL CHIP 10K 5% 1/10W  R133 1-216-050-00 METAL CHIP 20K 5% 1/10W  R135 1-216-295-00 METAL CHIP 20K 5% 1/10W  R136 1-216-295-00 METAL CHIP 20K 5% 1/10W  R137 1-216-295-00 METAL CHIP 0 5% 1/10W  R138 1-216-073-00 METAL CHIP 0 5% 1/10W  R139 1-216-073-00 METAL CHIP 10K 5% 1/10W  R139 1-216-073-00 METAL CHIP 0 5% 1/10W  R139 1-216-073-00 METAL CHIP 10K 5% 1/10W  R140 1-216-049-00 METAL CHIP 10K 5% 1/10W  R140 1-216-049-00 METAL CHIP 10K 5% 1/10W  R141 1-216-049-00 METAL CHIP 10K 5% 1/10W  R142 1-216-049-00 METAL CHIP 10K 5% 1/10W  R143 1-216-049-00 METAL CHIP 10K 5% 1/10W  R144 1-216-049-00 METAL CHIP 10K 5% 1/10W  R145 1-216-049-00 METAL CHIP 10K 5% 1/10W  R146 1-216-049-00 METAL CHIP 10K 5% 1/10W  R147 1-216-049-00 METAL CHIP 10K 5% 1/10W  R148 1-216-049-00 METAL CHIP 10K 5% 1/10W  R149 1-216-049-00 METAL CHIP 10K 5% 1/10W  R149 1-216-049-00 METAL CHIP 10K 5% 1/10W  R149 1-216-049-00 METAL CHIP 10K 5% 1/10W  R150 1-216-049-00 METAL CHIP 1												20.0	
R124   1-216-049-00   METAL CHIP   1K   5%   1/10W   C812   1-126-157-11   ELECT   10uf   20%   16V								6010	1 103 031 11	CLIMMIO CIII	0.0101		
R124   1-216-049-00   METAL CHIP   10K   5%   1/10W   C812   1-126-157-11   ELECT   10uF   20%   16V   S0V   R126   1-216-073-00   METAL CHIP   10K   5%   1/10W   C813   1-126-157-11   ELECT   10uF   20%   16V   S0V   R127   1-216-073-00   METAL CHIP   10K   5%   1/10W   C814   1-126-157-11   ELECT   10uF   20%   16V   S0V   R128   1-216-073-00   METAL CHIP   10K   5%   1/10W   C815   1-163-127-00   CERAMIC CHIP   270PF   5%   50V   C817   1-126-157-11   ELECT   10uF   20%   16V   C818   1-126-157-11   ELECT   10uF   20%   16V   C819   1-163-038-00   CERAMIC CHIP   20%   16V   C819   1-163-038-00   CERAMIC CHIP   20%   16V   C820   1-163-125-00   CERAMIC CHIP   20%   16V   C820   1-163-125-00   CERAMIC CHIP   20%   16V   C820   1-163-031-11   CERAMIC CHIP   20%   16V   C822   1-126-157-11   ELECT   10uF   20%   16V   C822   1-163-031-11   CERAMIC CHIP   0.01uF   50V   C822   1-126-157-11   ELECT   10uF   20%   16V   C822   1-126-157-11   ELECT   10uF								C011	1_126_154_11	FIFCT	A7uF	20%	6. 3V
R125   1-216-073-00   METAL CHIP   10K   5%   1/10W   C813   1-163-031-11   CERAMIC CHIP   0.01uF   50V	R124	1-216-049-00	METAL	CHIP	11/	3%	1/10#						
R126 1-216-073-00 METAL CHIP 10K 5% 1/10W 10R127 1-216-073-00 METAL CHIP 10K 5% 1/10W 120K 1216-073-00 METAL CHIP 10K 5% 1/10W 1216-073-00					4.017	-	1 /1 OW					20.0	
R127 1-216-073-00 METAL CHIP 10K 5% 1/10W R128 1-216-073-00 METAL CHIP 10K 5% 1/10W R129 1-216-073-00 METAL CHIP 10K 5% 1/10W R129 1-216-073-00 METAL CHIP 10K 5% 1/10W R130 1-216-596-11 METAL GLAZE 2.7K 1% 1/10W R131 1-216-049-00 METAL CHIP 1K 5% 1/10W R131 1-216-057-00 METAL CHIP 1K 5% 1/10W R132 1-216-105-00 METAL CHIP 20K 5% 1/10W R133 1-216-057-00 METAL CHIP 220K 5% 1/10W R135 1-216-295-00 METAL CHIP 0.5% 1/10W R136 1-216-295-00 METAL CHIP 0.5% 1/10W R137 1-216-295-00 METAL CHIP 0.5% 1/10W R138 1-216-073-00 METAL CHIP 0.5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R140 1-216-13-00 METAL CHIP 10K 5% 1/10W R141 1-216-049-00 METAL CHIP 10K 5% 1/10W R142 1-216-049-00 METAL CHIP 10K 5% 1/10W R143 1-216-073-00 METAL CHIP 10K 5% 1/10W R144 1-216-049-00 METAL CHIP 10K 5% 1/10W R145 1-216-049-00 METAL CHIP 10K 5% 1/10W R146 1-216-049-00 METAL CHIP 10K 5% 1/10W R147 1-216-049-00 METAL CHIP 10K 5% 1/10W R148 1-216-049-00 METAL CHIP 10K 5% 1/10W R149 1-216-049-00 METAL CHIP 10K 5% 1/10W R150 1-216-049-00 METAL CHIP 10K 5% 1/												20%	
R128 1-216-049-00 METAL CHIP 10K 5% 1/10W R129 1-216-073-00 METAL CHIP 10K 5% 1/10W R130 1-216-596-11 METAL GLAZE 2.7K 1% 1/10W R131 1-216-049-00 METAL CHIP 10K 5% 1/10W R132 1-216-105-00 METAL CHIP 10K 5% 1/10W R132 1-216-105-00 METAL CHIP 220K 5% 1/10W R133 1-216-059-00 METAL CHIP 220K 5% 1/10W R135 1-216-057-00 METAL CHIP 2.2K 5% 1/10W R135 1-216-295-00 METAL CHIP 0 5% 1/10W R136 1-216-295-00 METAL CHIP 0 5% 1/10W R137 1-216-295-00 METAL CHIP 0 5% 1/10W R138 1-216-073-00 METAL CHIP 0 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R140 1-216-113-00 METAL CHIP 10K 5% 1/10W R141 1-216-049-00 METAL CHIP 10K 5% 1/10W R141 1-216-049-00 METAL CHIP 10K 5% 1/10W R141 1-216-049-00 METAL CHIP 10K 5% 1/10W R143 1-216-049-00 METAL CHIP 10K 5% 1/10W R144 1-216-049-00 METAL CHIP 10K 5% 1/10W R145 1-216-049-00 METAL CHIP 10K 5% 1/10W R146 1-216-049-00 METAL CHIP 10K 5% 1/10W R147 1-216-049-00 METAL CHIP 10K 5% 1/10W R149 1-216-049-00 METAL CHIP 10K 5% 1/10W R150 1-216-049-00 METAL CHIP 10K												-	
R129 1-216-073-00 METAL CHIP 10K 5% 1/10W C816 1-163-127-00 CERAMIC CHIP 270FF 5% 50V C817 1-126-157-11 ELECT 10uF 20% 16V C818 1-216-157-11 ELECT 10uF 20% 16V C819 1-163-038-00 CERAMIC CHIP 0.1 uF 25V C819 1-163-038-00 CERAMIC CHIP 0.1 uF 25V C819 1-163-038-00 CERAMIC CHIP 0.1 uF 25V C819 1-163-125-00 CERAMIC CHIP 220FF 5% 50V C819 1-163-125-00 CERAMIC CHIP 220FF 5% 50V C820 1-163-125-00 CERAMIC CHIP 20FF 5% 50V C820 1-163-125-00 CERAMIC CHIP 20FF 5% 50V C820 1-163-125-00 CERAMIC CHIP 20FF 5% 50V C820 1-163-031-11 CERAMIC CHIP 20FF 5% 50V C820 1-163-031-11 CERAMIC CHIP 0.01 uF 50V C820 1-163-031-11 CERAMIC CHIP 0								6013	1-103-127 0	OLIMATO OTTI	27011	0.0	401
R130 1-216-596-11 METAL GLAZE 2. 7K 1% 1/10W C818 1-126-157-11 ELECT 10uF 20% 16V C819 1-163-038-00 CERAMIC CHIP 0. 1uF 25V C820 1-163-038-00 CERAMIC CHIP 0. 1uF 25V C820 1-163-125-00 CERAMIC CHIP 220PF 5% 50V C820 1-163-125-00 CERAMIC CHIP 20PF 5% 50V C820 1-163-031-11 CERAMIC CHIP 0.01uF 50V C822 1-126-157-11 ELECT 10uF 20% 16V C822 1-126-157-11 ELECT 10uF 50V C822 1-126-157-11 ELECT 10uF 50								C016	1_163_197_0	CERAMIC CHIP	270PF	5%	50V
R130 1-216-596-11 METAL GLAZE 2.7K 1% 1/10W C818 1-126-157-11 ELECT 10uF 20% 16V R131 1-216-049-00 METAL CHIP 1K 5% 1/10W C819 1-163-038-00 CERAMIC CHIP 0. 1uF 25V R132 1-216-105-00 METAL CHIP 220K 5% 1/10W C820 1-163-125-00 CERAMIC CHIP 220PF 5% 50V R133 1-216-057-00 METAL CHIP 0. 5% 1/10W C821 1-163-031-11 CERAMIC CHIP 0. 01uF 50V C822 1-126-295-00 METAL CHIP 0. 5% 1/10W C823 1-163-031-11 CERAMIC CHIP 0. 01uF 50V C823 1-163-031-11 CERAMIC CHIP 0. 01uF 50V C823 1-163-031-11 CERAMIC CHIP 0. 01uF 50V C824 1-163-031-11 CERAMIC CHIP 0. 01uF 50V C824 1-163-031-11 CERAMIC CHIP 0. 01uF 50V C824 1-163-031-11 CERAMIC CHIP 0. 01uF 50V C825 1-163-031-11 CERAMIC CHIP 0. 01uF 50V C826 1-163-031-11 CERAMIC CHIP 0. 01	R129	1-216-073-0	U METAL	CHIP	TUK	27	1/10#	1					
R130 1-216-049-00 METAL CHIP 1K 5% 1/10W R131 1-216-049-00 METAL CHIP 220K 5% 1/10W R132 1-216-057-00 METAL CHIP 220K 5% 1/10W R133 1-216-057-00 METAL CHIP 2. 2K 5% 1/10W R135 1-216-295-00 METAL CHIP 0 5% 1/10W R136 1-216-295-00 METAL CHIP 0 5% 1/10W R137 1-216-295-00 METAL CHIP 0 5% 1/10W R138 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R140 1-216-113-00 METAL CHIP 470K 5% 1/10W R141 1-216-049-00 METAL CHIP 10K 5% 1/10W R142 1-216-049-00 METAL CHIP 10K 5% 1/10W R143 1-216-049-00 METAL CHIP 10K 5% 1/10W R144 1-216-049-00 METAL CHIP 10K 5% 1/10W R145 1-216-049-00 METAL CHIP 10K 5% 1/10W R146 1-216-049-00 METAL CHIP 10K 5% 1/10W R147 1-216-049-00 METAL CHIP 10K 5% 1/10W R148 1-216-049-00 METAL CHIP 10K 5% 1/10W R149 1-216-049-00 METAL CHIP 10K 5% 1/10W R150 1-216-049-00 METAL CHIP 10K					0.87	4.00	4 /4 000						
R131 1-216-103-00 METAL CHIP 220K 5% 1/10W R132 1-216-057-00 METAL CHIP 22 K 5% 1/10W R133 1-216-295-00 METAL CHIP 2. 2K 5% 1/10W R136 1-216-295-00 METAL CHIP 0 5% 1/10W R137 1-216-295-00 METAL CHIP 0 5% 1/10W R138 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R140 1-216-113-00 METAL CHIP 470K 5% 1/10W R141 1-216-049-00 METAL CHIP 1K 5% 1/10W R142 1-216-049-00 METAL CHIP 1K 5% 1/10W R143 1-216-049-00 METAL CHIP 1K 5% 1/10W R144 1-216-049-00 METAL CHIP 1K 5% 1/10W R145 1-216-049-00 METAL CHIP 1K 5% 1/10W R146 1-216-049-00 METAL CHIP 1K 5% 1/10W R147 1-216-049-00 METAL CHIP 1K 5% 1/10W R148 1-216-049-00 METAL CHIP 1K 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W R150 1-216-049-00 METAL CHIP 1 K 5% 1/10W R150 1-216-049-00 METAL CHI												404	
R133 1-216-057-00 METAL CHIP 2. 2K 5% 1/10W R135 1-216-295-00 METAL CHIP 0 5% 1/10W R136 1-216-295-00 METAL CHIP 0 5% 1/10W R137 1-216-295-00 METAL CHIP 0 5% 1/10W R138 1-216-295-00 METAL CHIP 0 5% 1/10W R138 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R140 1-216-113-00 METAL CHIP 10K 5% 1/10W R141 1-216-049-00 METAL CHIP 10K 5% 1/10W R145 1-216-049-00 METAL CHIP 10K 5% 1/10W R147 1-216-073-00 METAL CHIP 10K 5% 1/10W R148 1-216-073-00 METAL CHIP 10K 5% 1/10W R149 1-216-049-00 METAL CHIP 10K 5% 1/10W R149 1-216-049-00 METAL CHIP 1 K 5% 1/10W R150 1-216-049-00 METAL CHIP 1 CHIP												5%	
R135 1-216-295-00 METAL CHIP 0 5% 1/10W C822 1-126-157-11 ELECT 10uF 20% 16V C822 1-126-295-00 METAL CHIP 0 5% 1/10W C823 1-163-031-11 CERAMIC CHIP 0.01uF 50V C823 1-163-031-11 CERAMIC CHIP 0.01uF 50V C824 1-163-031-11 CERAMIC CHIP 0.01uF 50V C825 1-163-031-11 CERAMIC CHIP 0.01uF 50V C826 1-163-031-11 CERAMIC CHIP 0.01uF 5								6020	1-103-123-0	O CERMINO CHIL	LLUII	0.4	001
R136 1-216-295-00 METAL CHIP 0 5% 1/10W C823 1-163-031-11 CERAMIC CHIP 0.01uf 50V R137 1-216-295-00 METAL CHIP 10K 5% 1/10W C824 1-163-031-11 CERAMIC CHIP 0.01uf 50V R138 1-216-073-00 METAL CHIP 10K 5% 1/10W C825 1-163-031-11 CERAMIC CHIP 0.01uf 50V R139 1-216-073-00 METAL CHIP 10K 5% 1/10W C826 1-163-031-11 CERAMIC CHIP 0.01uf 50V R140 1-216-113-00 METAL CHIP 470K 5% 1/10W C826 1-163-031-11 CERAMIC CHIP 0.01uf 50V C826 1-163-031-11 CERAMIC CHIP								C021	1_162_031_1	1 CERAMIC CHIE	0.01uF		50V
R136 1-216-295-00 METAL CHIP 0 5% 1/10W C823 1-163-031-11 CERAMIC CHIP 0.01uf 50V C824 1-163-031-11 CERAMIC CHIP 0.01uf 50V C824 1-163-031-11 CERAMIC CHIP 0.01uf 50V C825 1-216-073-00 METAL CHIP 10K 5% 1/10W C825 1-163-031-11 CERAMIC CHIP 0.01uf 50V C825 1-216-073-00 METAL CHIP 10K 5% 1/10W C826 1-163-031-11 CERAMIC CHIP 0.01uf 50V C826 1-216-13-00 METAL CHIP 10K 5% 1/10W C826 1-163-031-11 CERAMIC CHIP 0.01uf 50V C826 1-216-049-00 METAL CHIP 10K 5% 1/10W C826 1-163-031-11 CERAMIC CHIP 0.01uf 50V C826 1-216-049-00 METAL CHIP 1K 5% 1/10W C826 1-216-049-00 METAL CHIP 1K 5% 1/10W CF801 1-567-390-11 FILTER, CERAMIC 10.7M CF801 1-216-049-00 METAL CHIP 1K 5% 1/10W CF801 1-567-390-11 FILTER, CERAMIC 10.7M CF801 1-216-049-00 METAL CHIP 1K 5% 1/10W CF801 1-569-387-11 SOCKET, CONNECTOR (PC BOARD) 10P	R135	1-216-295-0	O METAL	CHIP	U	27	1/10W					20%	
R136 1-216-295-00 METAL CHIP 0 5% 1/10W R137 1-216-295-00 METAL CHIP 10K 5% 1/10W R138 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R140 1-216-113-00 METAL CHIP 470K 5% 1/10W R141 1-216-049-00 METAL CHIP 1K 5% 1/10W R145 1-216-049-00 METAL CHIP 1K 5% 1/10W R147 1-216-049-00 METAL CHIP 1K 5% 1/10W R148 1-216-295-00 METAL CHIP 1 K 5% 1/10W R149 1-216-049-00 METAL CHIP 1 K 5% 1/10W R150 1-216-049-00 METAL CHIP 1 K 5% 1/10W				aura			4 /4 OW	1				204	
R138 1-216-073-00 METAL CHIP 10K 5% 1/10W R139 1-216-073-00 METAL CHIP 10K 5% 1/10W R140 1-216-113-00 METAL CHIP 470K 5% 1/10W  R141 1-216-049-00 METAL CHIP 1K 5% 1/10W R145 1-216-049-00 METAL CHIP 1K 5% 1/10W R147 1-216-073-00 METAL CHIP 1K 5% 1/10W R148 1-216-295-00 METAL CHIP 10K 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W R150 1-216-049-00 METAL CHIP 1K 5% 1/10W													
R138 1-216-073-00 METAL CHIP 10K 5% 1/10W 1-216-113-00 METAL CHIP 470K 5% 1/10W 1-216-113-00 METAL CHIP 470K 5% 1/10W 1-216-049-00 METAL CHIP 1K 5% 1/10W 1R145 1-216-049-00 METAL CHIP 1K 5% 1/10W 1R147 1-216-073-00 METAL CHIP 10K 5% 1/10W 1R148 1-216-295-00 METAL CHIP 10K 5% 1/10W 1R149 1-216-049-00 METAL CHIP 1K 5% 1/10W 1R150 1-216-049-00 METAL CHIP 1K 5% 1/10W					_								
R140 1-216-113-00 METAL CHIP 470K 5% 1/10W C826 1-163-031-11 CERAMIC CHIP 0.01uF 50V  R141 1-216-049-00 METAL CHIP 1K 5% 1/10W								(023	1-103-031-1	I CERAMIC CHIP	ų. UTUI		301
R141 1-216-049-00 METAL CHIP 1K 5% 1/10W R145 1-216-049-00 METAL CHIP 1K 5% 1/10W R147 1-216-073-00 METAL CHIP 10K 5% 1/10W R148 1-216-295-00 METAL CHIP 0 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W R150 1-216-049-00 METAL CHIP 1K 5% 1/10W  R150 1-216-049-00 METAL CHIP 1K 5% 1/10W  **CR801 1-567-390-11 FILTER, CERAMIC 10. 7M  **CR801 1-569-387-11 SOCKET, CONNECTOR (PC BOARD) 10P								0000	1 100 001 1	1 CEDANIC CUI	0 01E		500
R145 1-216-049-00 METAL CHIP 1K 5% 1/10W R147 1-216-073-00 METAL CHIP 10K 5% 1/10W R148 1-216-295-00 METAL CHIP 0 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W  R150 1-216-049-00 METAL CHIP 1K 5% 1/10W  R150 1-216-049-00 METAL CHIP 1K 5% 1/10W  **CR801 1-567-390-11 FILTER, CERAMIC 10. 7M  **CR801 1-567-390-11 FILTER, CERAMIC 10. 7	R140	1-216-113-0	O METAL	L CHIP	470K	5%	1/10W	C826	1-163-031-1	I CERAMIC CHIE	0. 01ur		204
R145 1-216-049-00 METAL CHIP 1K 5% 1/10W R147 1-216-073-00 METAL CHIP 10K 5% 1/10W R148 1-216-295-00 METAL CHIP 0 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W  R150 1-216-049-00 METAL CHIP 1K 5% 1/10W  **CF801 1-567-390-11 FILTER, CERAMIC 10. 7M  **CF801 1-567-390-11 FILTER, CERAMIC 10	R141	1-216-049-0	O META	L CHIP	1K	5%	1/10W			< FILTER >			
R147 1-216-073-00 METAL CHIP 10K 5% 1/10W R148 1-216-295-00 METAL CHIP 0 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W  R150 1-216-049-00 METAL CHIP 1K 5% 1/10W  **CF801 1-567-390-11 FILTER, CERAMIC 10. 7M  **CF801 1-567-390-11 FILTER, CERAMIC 10. 7M  **CR801 1-567-390-11 FILTER, CERAMI													
R148 1-216-295-00 METAL CHIP 0 5% 1/10W R149 1-216-049-00 METAL CHIP 1K 5% 1/10W < CONNECTOR > R150 1-216-049-00 METAL CHIP 1K 5% 1/10W + CN801 1-569-387-11 SOCKET, CONNECTOR (PC BOARD) 10P						-		CF80:	1-567-390-1	1 FILTER, CERAN	MIC 10.7M		
R149 1-216-049-00 METAL CHIP 1K 5% 1/10W CONNECTOR >  R150 1-216-049-00 METAL CHIP 1K 5% 1/10W + CN801 1-569-387-11 SOCKET, CONNECTOR (PC BOARD) 10P													
RIJU 1 210 043 00 militar 0111										< CONNECTOR	>		
RIGO I 210 043 00 militar oni		4 040 040		1 (1177	417	re.	1 /100	+ CNOO	1 1-560-387-1	1 SOCKET CONN	ECTOR (PC	ROARD)	10P
								* 5400	r 1-309-30/-	ii Joonel, conn	OID NOTOL	DOMIN).	

## NJ-4 POWER BLOCK

Ref. No.	Part No.	Descri	ption			Remark	Ref. No.	Part No.	Description			Remark
							R826	1-216-049-00	METAL CHIP	1K 5	<b>%</b> 1,	/10W
		< IC >	>				R827	1-216-121-00				/10W
								1-216-037-00				/10W
	8-752-322-24		XL1008M					1-216-081-00				/10W
IC802	8-759-031-84	IC S	SC7S04F					1-216-081-00				/10W
		< coll	. >				R831					
L801	1-408-970-21	INDUC	TOR	10uH			R832	1-216-049-00	METAL CHIP	1K 5	i <b>%</b> 1	/10W
L802	1-408-970-21			10uH					< VARIABLE	RESISTOR >		
L803	1-407-169-XX			100uH								
L804	1-407-169-XX			100uH			RV801	1-238-088-11	RES, ADJ, C		2K	
L805	1-408-979-21			56uH			******	******				*****
L806	1-408-970-21	INDUC	TOR	10uH				1-413-741-11	POWER BLOCK	(US, Canadia	an)	
1.807	1-408-970-21			10uH					*******			
2,007	1 100 010 11									(Ref. No. 60)	00 seri	ies)
		< TRA	NSISTOR	>					< CAPACITOR	1>		
Q801	8-729-421-19	TRANS	ISTOR	UN2213						_		
Q802	8-729-422-36			2SB709A-0	ì		<b>∆</b> C101	9-900-521-01		0. 1uF		125V
Q803	8-729-422-30			2SB709A-0	1		<b>⚠</b> C102	9-900-521-01		0. 1uF		125V
Q804	8-729-422-31			2SB709A-0			<b>∆</b> C103	9-900-522-01	CERAMIC	2200PF		125V
Q805	8-729-422-31			2SB709A-0			∆C104	9-900-522-01		2200PF		125V
4000	0 /20 122 0						<b>∆</b> C105	9-900-522-01	CERAMIC	2200PF		125V
Q806	8-729-422-3	6 TRANS	SISTOR	2SB709A-0	5				PLECT	17	200	100V
Q807	8-729-422-2	7 TRANS	SISTOR	2SD601A-0	5		C107	9-903-200-01		1uF	20%	
Q808	8-729-422-2	7 TRANS	SISTOR	2SD601A-	Q		C108	9-902-101-0		100PF		1kV
							C109	9-900-525-0		0. 047uF	Fe	400V
		< RES	SISTOR >	,			C110	1-130-491-0		0. 047uF	5% 5%	50V 50V
							C111	1-130-491-0	MILAR	0. 047uF	JA	304
R801	1-216-049-0			1K	5%	1/10W	C20.4	1-124-260-0	D ELECT	1000uF	20%	16V
R802	1-216-049-0			1K	5%	1/10W	C204	1-124-360-0		100uF	20%	16V
R803	1-216-129-0			2. 2M		1/10W	C205	1-126-101-1		2200uF	20%	10V
R804				2. 2M		1/10W	C206 C207	9-900-540-0 1-124-903-1		1uF	20%	50V
R805	1-216-105-0	0 META	L CHIP	220K	5%	1/10W	C207	1-124-472-1		470uF	20%	10V
pone	1-216-129-0	O META	CHIP	2. 2M	5%	1/10W	1					
R806				10K	5%	1/10W	C209	1-124-443-0	O ELECT	100uF	20%	10V
R807				10K	5%	1/10W	C210	1-124-445-1		100uF	20%	16V
R808 R809				100K		1/10W	C211	1-124-443-0	O ELECT	100uF	20%	10V
R810				22K	5%	1/10W						
noto	1 210 001 0	o men	D (1111	22		.,			< CONNECTO	OR >		
R811	1-216-057-0	O META	T CHIL	2. 2K	5%	1/10W						
	1-216-027-0			120	5%	1/10W	+ CN201	1-564-018-1	1 PIN, CONNI	CTOR 8P		
R813				1K	5%	1/10W						
R814				4. 7K	5%	1/10W	ļ		< DIODE >			
R815		DO META	L CHIP	10K	5%	1/10W				.mp. 1.00		
							<b>⚠</b> D101	9-900-511-0		LWBA60		
R816				560	5%	1/10W	D102	9-902-095-0		RA15-06		
R817	1-216-033-	00 META	AL CHIP	220	5%	1/10W	D103	9-900-512-0		GO1A		
R818				560	5%	1/10W	D104	8-719-200-		1ES2		
R819	1-216-071-	OO META	AL CHIP	8. 2K	5%	1/10\	D105	8-719-109-	3 DIODE K	D3. 0ESB2		
R820	1-216-079-	00 META	AL CHIP	18K	5%	1/10W	nsoe	9-900-514-	OI DIONE M	A165		
						4 /4 000	D106			U02Z		
R821		OO META	AL CHIP	4. 7K		1/10W	D203			U02Z		
R822				4. 7K		1/10W	D204			D15FB2		
R824				22K	5%	1/10W	D205 D206			K44		
R82	5 1-216-081-	00 MET	AL CHIP	22K	5%	1/10W	Ι υ200	9-903-219-	OI DIODE I	1144		
							The	components id	entified by	Les compos		
							mark	A or dotted	line with	par une ma	rque 🕂	sont
								are crit		critiques	pour la	sécurité.
							safe	ty. Replace o	nly with	Ne les rem	placer	que par une plèce
							part	number speci	fied.	portant le	numéro	spécifié.

## POWER BLOCK

#### R.I-35

VR201 9-903-244-01 RES, ADJ, CERMET 500

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description			Remark
D207	9-900-535-01				•	A-7063-210-A	RJ-35 BOARD, C			
D208	8-719-114-47						*********		e Ne ro	00 ao-i\
D209	9-903-220-01	DIODE AKO4						(Ke	1. NO. 5U	00 series)
		< FUSE >					< CAPACITOR >			
<b>♠</b> F101	1-532-743-11	FUSE, TIMER-LAG 2A 12	25 <b>V</b>	•	C502		CERAMIC CHIP			50V
					C504		CERAMIC CHIP			50V
		< IC >			C506			100PF	5%	50V
					C511			100PF	5%	50V
	9-903-221-01 8-759-420-19				C513	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
	9-903-223-01				C514	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
		< COIL >					< CONNECTOR >			
<b>∕</b> \$L101	9-900-520-01	FILTER LINE			CN501	1-568-073-11	CONNECTOR (REC	CEPTALE)	8P	
L201		CHOKE COIL 10uH		İ			CONNECTOR (REC			
1.202		CHOKE COIL 10uH					< DIODE >			
		< IC LINK >		·	D501	8-710-106- <i>44</i>	DIODE RD9. 11	4-B2		
<b>⚠</b> PS201	1-532-637-21	IC LINK ICP-N25 1. OA			D301	0 713 100 44		1 02		
		< PHOTO COUPLER >					< JACK >			
					J501	1-691-981-11	JACK, PIN 4P		N/VIDE	O OUT/
⚠PC101	9-902-097-01	PHOTO COUPLER PC817			1503	1_507_709_31	AUDIO IN/AUDIO JACK (CONTROL	-		
		< TRANSISTOR >			J505		JACK, ULTRA S		NTROL	L)
<b> ♠</b> Q101	9-902-096-01	TRANSISTOR 2SC4054					< colr >			
Q102		TRANSISTOR 2SC3377			L501	1_419_380_91	INDUCTOR CHIP	OuH		
		< RESISTOR >			F201	1-412-330-21	INDUCTOR CITY	oun		
							< RESISTOR >			
<b></b> ♠R101	1-202-729-00		10%	1/2W						4 /4 019
R102	1-249-441-11	CARBON 100k	5%	1/4W	R501			680	5%	1/10W
R103	1-249-441-11	CARBON 100k	5%	1/4W	R503	1-216-022-00		75	5%	1/10W
R104	1-249-433-1		5%	1/4W	R504	1-216-049-00	METAL CHIP	1K	5%	1/10W
<u></u> №R105	9-902-102-0	METAL 47K		3W			< SWITCH >			
<b></b> ∕ <b>R106</b>	1-215-864-1	L METAL 150	5%	1₩						
AR107	1-247-825-1			1/4W	S502	1-570-157-21	SWITCH, SLIDE	(CONTR	OL L M/	'S)
R108	1-249-397-1		5%	1/4W	******	********	**********	*****		******
R203	9-902-109-0			1/2W	1					
R204	1-215-428-0		1%	1/4W						
R205	1-215-426-0	D METAL 1.61	K 1%	1/4W						
R207	1-249-429-1			1/4W						
£R209	9-902-113-0		2.4	1/4W	1					
ÆR210	9-902-115-0			1/4W						
R210	1-249-429-1		5%	1/4W	1					
NZ1Z	1-243-423-1									
R213	1-215-891-1	1 METAL 680	5%	2₩						
		< VARIABLE RESISTOR	>							

The components identified by mark A or dotted line with mark. A are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque A sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
	A-7063-088-A	RP-134 BOARD,						< CONNECTOR	>		
		********		No. 100	O series)	CN001	1-566-545-41	CONNECTOR. F	PC (NON ZIE	) 13P	
			(nei.	NO. 100	0 301103/		1-691-072-11				
	156034711	CONNECTOR, FP	C (TRANSLAT	TION) 13	P		1-506-484-11				
		FP-502 FLEXIB		100/13	•		•				
		CABLE, FLAT		)				< IC >			
		CASE (LID), SI									
		CASE (MAIN),		)		IC001	8-752-032-35	IC CXA1202	Q-Z		
·	0 347 250 01	OILUE (MEIIII)				10002	8-759-062-52	IC CXA1443	<b>M</b> .		
		< CAPACITOR >									
			0.04.5		FOU			< COIL >			
		CERAMIC CHIP		a nev	50V	L001	1-408-970-21	INDUCTOR	10uH		
C002	1-126-157-11		10uF	20%	16V 16V	L002	1-407-169-XX		100uH		
	1-126-157-11		10uF	20%	50V	L003	1-407-169-XX		100uH		
		CERAMIC CHIP			50V	L003	1-408-970-21		10uH		
C007	1-163-031-11	CERAMIC CHIP	u. ulur		201	L004	1-408-972-21		15uH		
			0.045.5	4.00	0.00	LUUJ	1-400-372-21	INDUCTOR	15011		
C008		CERAMIC CHIP		10%	25V	Tone	1-408-948-00	INDUCTOR	220uH		
C009		CERAMIC CHIP		10%	16V	L006	1-408-970-21		10uH		
C010		CERAMIC CHIP		10%	16V	L007			100n		
C011		CERAMIC CHIP		10%	25V	L008	1-401-103-VV	INDUCTOR	100011		
CO12	1-163-031-11	CERAMIC CHIP	0. 01uf		50V			< TRANSISTOR	15		
0040	4 400 004 44	CEDANTO CUID	0.015		50V			( IIIIIIIIII	. /		
C013		CERAMIC CHIP			50V	0003	8-729-422-36	TRANSISTOR	2SB709A-Q		
C014		CERAMIC CHIP			50V	0005	8-729-216-22		2SA1162-Q		
CO15		CERAMIC CHIP			50V	9006		TRANSISTOR	_		
CO16		CERAMIC CHIP				0007	8-729-422-36		2SB709A-Q		
C018	1-163-031-11	CERAMIC CHIP	v. viur		50V	0008	8-729-421-19		UN2213		
0040	4 400 004 44	CEDIMIC CITE	0 01E		50V	2000	0 720 121 10	, Heriototoi.	OHELIV		
CO19		CERAMIC CHIP			50V	0000	8-729-424-18	TRANSISTOR	IIN2113		
C020		CERAMIC CHIP		20%	16V	6003	0 123 121 10	, Humbiblion	UNDITO		
C021	1-126-157-11		10uF		25V			< RESISTOR	>		
C022		CERAMIC CHIP	0. 1uf 10uF	20%	16V			( 100101011 )			
CO25	1-126-157-13	I ELECT	Tour	20/0	101	R004	1-216-295-00	METAL CHIP	0	5%	1/10W
<b>50.00</b>	4 460 000 0	CERAMIC CHIP	0 15		25V	R005	1-216-081-00			5%	1/10W
CO26		CERAMIC CHIP			50V	R006	1-216-309-00			5%	1/10W
C027		1. CERAMIC CHIP			50V	R008	1-216-081-00			5%	1/10W
CO28		1 CERAMIC CHIP		10%		R009	1-216-055-00		1. 8K		1/10W
CD29		O CERAMIC CHIP		10%	25V				2		•
CO 30	1-103-030-0	O CERMITO CITT	o. Iui		201	R010	1-216-081-00	METAL CHIP	22K	5%	1/10W
CDOL	1_102_021_1	1 CERAMIC CHIP	0.01uF		50V	R011	1-216-085-00			5%	1/10W
CO31		1 CERAMIC CHIP			50V		1-216-077-00		15K	5%	1/10W
	1-103-031-1	O CERAMIC CHIP	0. 0101		25V	R013	1-216-055-00		1. 8K		1/10W
CO33				5%	50V	R014	1-216-081-0		22K	5%	1/10W
CO34		1 CERAMIC CHIP		20%	10V		1 210 001 0	J			_,
CO35	1-127-558-1	1 ELECT (SOLID)	TOUR	20%	104	R015	1-216-085-0	O METAL CHIP	33K	5%	1/10W
0000	4 400 447 0	O CEDIMIC CUID	100PF	5%	50V	R016		O METAL CHIP	12K	5%	1/10W
CO37		O CERAMIC CHIP			50V	R017		O METAL CHIP	22K	5%	1/10W
CO38		O CERAMIC CHIP		5% 5%	50V	R018		O METAL CHIP	22K	5%	1/10W
CO39		O CERAMIC CHIP				R019		O METAL CHIP	10K	5%	1/10W
CO40		O CERAMIC CHIP		5%	50V 25V	11013	1 210 010 0	C MELLIN VIIII	1011		2/ 27!!
CO41	1-103-038-0	O CERAMIC CHIP	0. 1uF		231	R021	1-216-073-0	O METAL CHIP	10K	5%	1/10W
<b>70</b> ***	4 400 000 0	O CEDANIC CUIT	) N 1		25V	R022		O METAL CHIP	10K	5%	1/10W
CO42		O CERAMIC CHIE		5%	50V	R023		O METAL CHIP	0	5%	1/10W
CO44		O CERAMIC CHIP		20%	16V	R026		O METAL CHIP	0	5%	1/10W
CO45	1-126-157-1	II ELEUI	10uF	20%	101	R027		O METAL CHIP	6. 8K		1/10W
						1 1021	1 220 000 0	- main viill	0. 011		_,,

Ref. No.	Part No.	Descr	iption			Remar	k 1	Ref. No.	Part No.	Description			Remark
R028	1-216-053-00	METAL	CHIP	1. 5K	5%	1/10W	-   '	C022	1-126-157-11	ELECT	10uF	20%	16V
R029	1-216-061-00			3. 3K		1/10W		C023		CERAMIC CHIP			25V
R030	1-216-049-00			1K		1/10W		C024	1-126-157-11		10uF	20%	16V
R032	1-216-029-00			150		1/10W		C025	1-126-157-11		10uF	20%	16V
R033	1-216-025-00			4. 7K		1/10W		C026		CERAMIC CHIP			25V
MOSS	1-210-003-00	WEINL	OHIT	4. 111	3.0	1/1011		0020	1 100 000 00	opidanio onii	D. 241		
R034	1-216-295-00	METAL	CHIP	0	5%	1/10W		C029	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
R036	1-216-049-00	METAL	CHIP	1K	5%	1/10₩		C030	1-163-809-11	CERAMIC CHIP	0. 047uF	10%	25V
R037	1-216-025-00	METAL	CHIP	100	5%	1/10W		C031	1-163-037-11	CERAMIC CHIP	0. 022uF	10%	25V
RO39	1-216-025-00	METAL	CHIP	100	5%	1/10W		C032		CERAMIC CHIP		10%	25V
R040	1-216-041-00	METAL	CHIP	470	5%	1/10W	İ	C033	1-163-031-11	CERAMIC CHIP	0. 01uF		50 <b>V</b>
DO 41	1-910-019-00	MCTAT	CUID	33	5%	1/10W		C034	1-163-009-11	CERAMIC CHIP	0 001uF	10%	50V
R041	1-216-013-00			15	5%	1/10W		C035		CERAMIC CHIP		10%	50V
R042	1-216-005-00			2. 2K		1/10W		CO36		CERAMIC CHIP		1010	50V
R043	1-216-057-00					•	1	C037		CERAMIC CHIP			50V
R044	1-216-065-00			4. 7K		1/10W		C037		CERAMIC CHIP			25V
R045	1-216-035-00	METAL	CHIP	270	5%	1/10W		6030	1-103-030-00	CERMINE CITY	u. Iui		231
R046	1-216-033-00	METAL	CHIP	220	5%	1/10W		C039	1-126-157-11	ELECT	10uF	20%	16V
R047	1-216-081-00			22K	5%	1/10W		C040	1-163-038-00	CERAMIC CHIP	0. 1uF		25V
R048	1-216-085-00	METAL	CHIP	33K	5%	1/10W		C041	1-163-031-11	CERAMIC CHIP	0. 01uF		50V
R050	1-216-025-00	METAL	CHIP	100	5%	1/10W		C042	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
R052	1-216-309-00	METAL	CHIP	5. 6	5%	1/10W		C043	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
											0 000 B	4.00	OFTI
R053	1-216-295-00	METAL	CHIP	0	5%	1/10W		CO45		CERAMIC CHIP		10%	25V 25V
								C046		CERAMIC CHIP		10% 10%	25V
		< VAH	HABLE RES	SISTUR >	•			C101		CERAMIC CHIP		10%	16V
mr10.0.4		220	487 G485	ON 4711				C102		CERAMIC CHIP			25V
	1-241-123-11							C103	1-103-039-00	CENAMIC CHIP	u. Iur		234
	1-241-123-11							C104	1-104-004-11	CEDANIC CUID	0.1	10%	25V
	1-230-721-11							C104		CERAMIC CHIP		10%	25V
******	**********	*****	*******	******	*****	*****	***	C105 C106		CERAMIC CHIP			50V
		00.4	A DOADD	count E	817			C107		CERAMIC CHIP		10%	25V
*	A-7063-207-A		14 BUAKD, ********					C108	_	CERAMIC CHIP			50V
		****	*******			2000 serie	es)	0100	1 103 017 00	OLIUMITO OIIII	0.001/01	0.4	001
				(***				C109	1-130-495-00	MYLAR	0. 1uF	5%	50V
	1-690-801-11	CABI.	E. FLAT (I	SV-1)	24P			C110	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
	1-696-042-11							C111	1-163-035-00	CERAMIC CHIP	0.047uF		50V
	3-947-505-01							C112	1-126-163-11	ELECT	4. 7uF	20%	50V
								C113	1-164-330-21	CERAMIC CHIP	0. 22uF	10%	16V
		< CAI	PACITOR >										
										CERAMIC CHIP			16V
C006	1-163-101-00	CERA	MIC CHIP	22PF	5%	50V		C115		CERAMIC CHIP			
C007	1-163-038-00					25V		C116		CERAMIC CHIP			50V
C008	1-163-038-0	CERA	MIC CHIP	0. 1uF		25V		C117		CERAMIC CHIP		10%	50V
C009	1-126-157-1	I ELEC	T	10uF	20	% 16V		C118	1-164-232-11	CERAMIC CHIP	0. 01uF		50V
C010	1-163-038-0	CERA	MIC CHIP	0. 1uF		25V							oer:
****	4 400 000 :	4 455.	MIC CUIP	1000		FOLI		C120	1-163-038-00	CERAMIC CHIP	0. 1uf 1uF	20%	25V 50V
C012	1-163-229-1				5%		1	C121				20%	
C013	1-163-235-1			22PF	5%			C122		CERAMIC CHIP			25V 25V
CO15	1-163-087-0			4PF	r 40	50V		C123		CERAMIC CHIP			25V
C016	1-163-009-1							C124	1-103-030-0	CERAMIC CHIP	o. 1ar		2J¥
C017	1-164-489-1	1 CERA	MIC CHIP	o. ZZuF	10	% 16V		C125	1-124-589-1	1 ELECT	47uF	20%	16V
0010	1_164_400 4	1 Cth	שור כעום	n 22E	10	% 16V		C125		D ELECT (SOLID)		20%	16V
C019	1-164-489-1 1-126-157-1			0. 22ur 10uF	20			C127		1 CERAMIC CHIP		5%	50V
C020 C021	1-120-157-1				20	25V		C128	-	D CERAMIC CHIP		10%	25V
0021	1-103-030-0	U UERA	mic onir	o. Iur		231	1	0120	1 100 011 0	- Januarity VIIII	o. Lut	20.4	

Ref. No.	Part No.	Description			Remark	Ref. N	lo. Pa	art No.	Descr	iption			Remark	
	4 400 005 00	CERNITA GUIR	0.047.5			101	02 0-	750_000_55	TC.	CAYOUUE				
C129 C130	1-163-035-00 1-163-101-00		0. 047uF 22PF	5%	50V 50V			-759-990-55 -759-148-05		CXA80061 CXA80101				
	1-163-101-00		22PF	5%	50V			759-823-94		LB1836M	•			
C132	1-127-558-11		10uF	20%	10V									
C133	1-163-101-00		22PF	5%	50V				< coi	Γ >				
C134	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	<b>∧L00</b>	2 1-	408-978-21	INDUC	TOR	47uH			
	1-127-558-11		10uF	20%	10V	L00		407-169-XX			100uH			
C136	1-126-157-11	ELECT	10uF	20%	16V	L00	7 1-	408-970-21	INDUC	TOR	10uH			
C137	1-126-157-11		10uF	20%	16V	L00	8 1-	-424-522-21	COIL,	CHOKE	10uH			
C140	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	F00	9 1-	-424-524-21	COIL,	CHOKE	47uH			
C144	1-164-489-11	CERAMIC CHIP	0. 22uF	10%	16V	L01	0 1-	424-524-21	COIL,	CHOKE	47uH			
C145	1-163-038-00		0. 1uF		25 <b>V</b>	L10	1 1-	412-010-41	INDUC	TOR CHI	P 22uH			
C146	1-163-989-11	CERAMIC CHIP	0. 033uF	10%	25V									
C147	1-164-232-11	CERAMIC CHIP	0. 01uF		50V				< IC	LINK >				
C148	1-164-489-11	CERAMIC CHIP	0. 22uF	10%	16V	0.004	04 4	FAA COF OO	1 7377	7.0	0.44.7	TOD N	110)	
01.40	1 102 027 11	CEDANIC CUID	0 022E	104	25V	∆ PS1	101 1-	-532-605-00	LINK,	10	0.4A (	(ICP-N	(10)	
C149		CERAMIC CHIP	0. 022ur 0. 0015uF	10% 10%	50V				< TRA	NSISTOR	>			
C151		CERAMIC CHIP		5%	50V				1114	EIGIDIOR	_			
0132	1 103 233 11	OLIMANIO ONII	0011	0.6	001	Q00	1 8-	-729-901-01	TRANS	SISTOR	DTC144EK			
		< CONNECTOR >				Q00		-729-100-66			2SC1623-L	.6		
		( doinibolon )				Q00		-729-901-01			DTC144EK			
* CNO01	1-691-083-11	HOUSING, CONN	ECTOR 24P			Q10	)2 8-	-729-901-06	TRANS	SISTOR	DTA144EK			
		HOUSING, CONN				Q10	)4 8-	-729-424-77	TRANS	SISTOR	UN2210			
		HOUSING, CONN												
CNO05	1-566-546-11	CONNECTOR, FF	C (NON ZIE	) 14P		Q10	)5 8	-729-424-77	TRANS	SISTOR	UN2210			
CN101	1-566-531-11	CONNECTOR, FP	C (ZIF) 15	5P		Q10	)6 8·	-729-420-12	TRANS	SISTOR	XN4213			
						Q10	)8 8-	-729-100-66	TRANS	SISTOR	2SC1623-I	<b>.</b> 6		
		CONNECTOR, FF				<b>△</b> Q10		-729-805-25			2SB1121			
		PIN, CONNECTO				Q11	10 8	-729-100-66	TRANS	SISTOR	2SC1623-I	.6		
* CN104	1-565-541-11	PIN, CONNECTO	OR (PC BOAI	RD) ZP		A 011		720 005 25	TDANG	COTOR	9CD1191			
		( DIODE )				<b>∆</b> Q11		-729-805-25			2SB1121 2SB709A-0	1		
		< DIODE >				Q11 Q11		-729-422-36 -729-100-66			2SC1623-I			
A DOOR	0 710 900 97	DIONE CION	29			Q11		-729-100-00 -729-402-81			XN4501			
<b>∆</b> D002	8-719-200-27					Q11		-729-901-04			DTA114EK			
<b>∆</b> D003 D004	8-719-200-27 8-719-104-34					41.		720 001 01		010101	<i>P</i>			
D102	8-719-938-75								< RE	SISTOR >				
D103	8-719-938-75													
						R00	01 1	-216-073-00	META	L CHIP	10K	5%	1/10W	
D106	8-719-104-34	DIODE 1S28	36			RO	02 1	-216-073-00	META	L CHIP	10K	5%	1/10W	
						RO		-216-073-00			10K	5%	1/10W	
		< FERRITE BEA	AD >			RO		-216-073-00			10K	5%	1/10W	
		THE COMMON AUT	0 11			RO	07 1	-216-049-00	META	L CHIP	1K	5%	1/10W	
		INDUCTOR CHI				RO	DR 1	-216-049-00	META	ГСИТР	1K	5%	1/10W	
		I INDUCTOR CHIL				RO		-216-049-00			1K	5%	1/10W	
		I INDUCTOR CHI				RO		-216-073-00			10K	5%	1/10W	
		I INDUCTOR CHI				RO		-216-073-00			10K	5%	1/10W	
1 D104	1 412 330 21	TADOUTOR OIL	, oun			RO		-216-073-00			10K	5%	1/10W	
		< IC >												
						t .		-216-073-00			10K	5%	1/10W	
	8-752-838-0					1		-216-073-00			10K	5%	1/10W	
	8-759-070-9		-					-216-073-00			10K	5%	1/10₩	
	8-759-945-1							-216-073-00  -216-073-00			10K	5% 5%	1/10W	
I C101	8-759-823-6	5 IC MCDOO2A	M			ı RU	23 1	1-216-073-00	J META	L CHIP	10K	5%	1/10W	
						Th	e comp	onents iden	ntifie	d by Le	es composa	nts i	identifiés	
						1		or dotted			ar une mar			
						ma	rk. A	are critic	cal fo				la sécurité.	
						sa	fety.	Replace on	ly wit				r que par une	pièc∉
						pa	ert num	mber specif	ied.	p	ortant le	numéi	ro spécifié.	

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Descri	iption			Remark
R024	1-216-073-00	METAL CHIP	10K	5%	1/10₩	R091	1-216-049-00	METAL	CHIP	1K	5%	1/10W
R025	1-216-073-00		10K	5%	1/10W	R092	1-216-049-00	METAL	CHIP	1K	5%	1/10W
R026	1-216-073-00		10K	5%	1/10W	R093	1-216-049-00	METAL	CHIP	1K	5%	1/10W
R027	1-216-295-00		0	5%	1/10W	R094	1-216-049-00	METAL	CHIP	1K	5%	1/10W
R030	1-216-089-00		47K	5%	1/10W	R095	1-216-295-00			0	5%	1/10W
R032	1-216-295-00	METAL CHIP	0	5%	1/10W	R096	1-216-073-00	METAL	CHIP	10K	5%	1/10W
R033	1-216-049-00		1K	5%	1/10W	R097	1-216-061-00	METAL	CHIP	3. 3K	5%	1/10W
R034	1-216-097-00		100K	5%	1/10W	R098	1-216-049-00	METAL	CHIP	1K	5%	1/10W
R035	1-216-097-00		100K	5%	1/10W	R099	1-216-049-00	METAL	CHIP	1K	5%	1/10W
R036	1-216-097-00		100K	5%	1/10W	R101	1-216-689-11			39K	0. 5%	1/10W
R037	1-216-049-00	METAL CHIP	1K	5%	1/10W	R103	1-216-073-00	METAL	CHIP	10K	5%	1/10W
	1-216-049-00		1K	5%	1/10W	R104	1-216-073-00			10K	5%	1/10W
R039	1-216-049-00		10K	5%	1/10W	R105	1-216-073-00			10K	5%	1/10W
R040			10K	5%	1/10W	R106	1-216-097-00			100K	5%	1/10W
R041	1-216-073-00		47K	5%	1/10W	R107	1-216-089-00			47K	5%	1/10W
R044	1-216-089-00	METAL CHIP	4/1	J.6	1/10#	11107				2111		
R046	1-216-049-00	METAL CHIP	1K	5%	1/10W	R108	1-216-089-00	METAL	CHIP	47K	5%	1/10W
R049	1-216-295-00		0	5%	1/10W	R109	1-216-097-00	METAL	CHIP	100K	5%	1/10W
R052	1-216-057-00		2. 2K	5%	1/10W	R110	1-216-061-00	METAL	CHIP	3. 3K	5%	1/10W
R053	1-216-049-00		1K	5%	1/10W	R112	1-216-089-00	METAL	CHIP	47K	5%	1/10W
R055	1-216-049-00		1K	5%	1/10W	R113	1-216-037-00	METAL	CHIP	330	5%	1/10W
nare	1-216-049-00	METAL CUID	1K	5%	1/10W	R114	1-216-295-00	METAL	CHIP	0	5%	1/10W
R056			1K	5%	1/10W	R116	1-217-671-11			1	5%	1/10W
R057	1-216-049-00 1-216-049-00		1K	5%	1/10W	R117	1-217-671-11			1	5%	1/10W
R058			1K	5%	1/10W	R118	1-217-671-11			1	5%	1/10W
R059 R061	1-216-049-00 1-216-089-00		47K	5%	1/10W	R119	1-217-671-11			1	5%	1/10W
		A AMERICA ALLER	ATTV	Fev	1 /1050	R120	1-216-083-00	METAI	CHID	27K	5%	1/10W
R062		METAL CHIP	47K	5%	1/10W	R121	1-216-083-06			27K	5%	1/10W
R063		METAL CHIP	47K	5%	1/10\\	R122	1-216-295-0			0	5%	1/10W
R064		METAL CHIP	47K	5%	1/10W	R122	1-216-083-0			27K	5%	1/10W
R065		METAL CHIP	47K	5%	1/10W	R123	1-216-073-0			10K	5%	1/10W
R067	1-216-089-0	METAL CHIP	47K	5%	1/10W	R124	1-210-073-00	MCIAL	Lomr	Ton	3.40	1/10"
R069	1-216-073-0	METAL CHIP	10K	5%	1/10W	R130	1-216-121-0	METAL	CHIP	1M	5%	1/10W
R070		O METAL CHIP	10K	5%	1/10W	R131	1-216-121-0	METAL	LCHIP	1M	5%	1/10W
R071		O METAL CHIP	10K	5%	1/10W	R134	1-216-089-0	META	LCHIP	47K	5%	1/10W
R072		O METAL CHIP	10K	5%	1/10W	R135	1-216-069-0	METAL	L CHIP	6.8K	5%	1/10W
R073		O METAL CHIP	10K	5%	1/10W	R137	1-216-083-0	META!	L CHIP	27K	5%	1/10W
R075	1_216_072_0	O METAL CHIP	10K	5%	1/10W	R138	1-216-069-0	D META	L CHIP	6. 8K	5%	1/10W
		O METAL CHIP	1K	5%	1/10W	R140	1-216-057-0			2. 2K	5%	1/10W
R077		O METAL CHIP	1K	5%	1/10W	R141	1-216-063-0			3. 9K		1/10W
R079		O METAL CHIP	1K	5%	1/10W	R142	1-216-033-0			220	5%	1/10W
R080 R081	_	O METAL CHIP	1K	5%	1/10W	R143	1-216-069-0			6. 8K	5%	1/10W
2054	4 040 040 0	o Mean and	417	E@	1/10W	R144	1-216-057-0	n Meta	I CHIP	2. 2K	5%	1/10W
R082		O METAL CHIP	1K	5%	1/10W	R144				18K	5%	1/10W
R083		O METAL CHIP	1K	5%		R145				680	5%	1/10W
R084		O METAL CHIP	1K	5%	1/10W	R147				5. 6K		1/10W
R085		O METAL CHIP	1K	5%	1/10W					1. 8K		1/10W
R088	1-216-049-0	00 METAL CHIP	1K	5%	1/10W	R148	1-710-033-0	U MEIA	L VIIIF	1. 01	3.40	1, 10"
R087		O METAL CHIP	1K		1/10W	R149				2. 2K		1/10W
R088	1-216-061-0	OO METAL CHIP	3. 3K	5%	1/10W	R150				18K	5%	1/10W
R089		OO METAL CHIP	1K	5%	1/10W	R151				680	5%	1/10W
R090	1-216-049-	00 METAL CHIP	1K	5%	1/10W	R152	1-216-067-0	O META	AL CHIP	5. 6K	5%	1/10W

Ref. No.	Part No.	Descr	iption			Remark	Ref. No.	Part No.	Descr	iptic	on			Remark	
R153	1-216-051-00	METAL	CHIP	1. 2K	5%	1/10W	R244	1-216-121-00	METAL	CHIP	1	VÍ.	5%	1/10W	
	1-216-063-00			3. 9K		1/10W	R245	1-216-048-00	METAL	CHIP	9:	10	5%	1/10W	
	1-216-295-00			0	5%	1/10W	R246	1-216-105-00				20K	5%	1/10W	
R163	1-216-295-00			0	5%	1/10W	R247	1-216-039-00				90	5%	1/10W	
R165	1-216-192-00			560	5%	1/8W	R249	1-216-073-00				OK	5%	1/10W	
VI 62	1-210-192-00	METAL	OHIF	300	3.0	1/01	112.43	1 210 070 00	ML ITIL	. 01111		J.1.	0.0	1, 10"	
R166	1-216-089-00	METAL	CHIP	47K	5%	1/10W	R250	1-216-069-00	METAL	. CHIP	6.	8K	5%	1/10W	
R169	1-216-097-00	METAL	CHIP	100K	5%	1/10W	R251	1-216-089-00	METAL	. CHIP	4	7K	5%	1/10W	
R170	1-216-295-00	METAL	CHIP	0	5%	1/10W	R252	1-216-295-00	METAL	. CHIP	0		5%	1/10W	
R171	1-216-295-00	METAL	CHIP	0	5%	1/10W	R253	1-216-074-00	METAL	. CHIF	1:	1K	5%	1/10W	
R172	1-216-295-00	METAL	CHIP	0	5%	1/10W	R255	1-216-045-00	METAL	. CHIP	68	80	5%	1/10W	
D1 77	1-216-295-00	METAL	CUID	0	5%	1/10W	R256	1-216-073-00	METAI	CHIE	) 10	OK	5%	1/10W	
R177				_			R257						5%	1/10W	
R179	1-216-061-00			3. 3K		1/10W		1-216-105-00							
R180	1-216-061-00			3. 3K		1/10W		1-216-097-00				00K		1/10W	
R193	1-216-073-00			10K		1/10W	R259	1-216-089-00	METAL	CHIP	4	/K	5%	1/10₩	
R194	1-216-073-00	METAL	CHIP	10K	5%	1/10W			/ WAI	TARIF	RESIST	∩R >			
R195	1-216-073-00	METAL.	CHIP	10K	5%	1/10W			\ VAI	IIADLL	. neoron	on /			
R196	1-216-073-00			10K	5%	1/10W	RV102	1-238-089-11	RES.	AD.I.	CERMET		4. 7K		
R197	1-216-089-00			47K	5%	1/10W		1 200 000 11	,	1200	02111121		2		
R198				47K	5%	1/10W			/ VIII	BRATOF	,				
	1-216-089-00				5%				\ \ \ 111	MATTO	. /				
R200	1-216-295-00	MEIAL	CHIP	0	7%	1/10W	VAAA	1 570 257 01	TADD	TOD	CDVCTAI	/11	onwu		
2000	4 040 000 00	.mm.r	AUT D	0.017		4 /4 (50)	X002	1-579-367-21							
R202	1-216-069-00			6. 8K		1/10W	******	********	*****	*****	******	****	*****	*******	•
R203	1-216-067-00			5. 6K		1/10W									
R205	1-216-089-00	METAL	CHIP	47K		1/10W	*	A-7063-182-A							
R209	1-216-689-11	METAL	CHIP			1/10W			****	****	******				
R210	1-216-089-00	METAL	CHIP	47K	5%	1/10W						(Re	f. No. 2	000 series	)
R211	1-216-295-00	METAL	CHIP	0	5%	1/10W		1-690-804-11	CABI.E	. FL	AT (FUS-	2) 1	4P		
R212	1-216-081-00			22K		1/10W		1 000 001 11	0,100.	,	(100 )	-, -			
R213	1-216-097-00			100K		1/10W			< cor	NECTO	nr >				
R213	1-216-037-00			10K	5%	1/10W			( 001	WILD I	<i>n</i> ( )				
				470	5%	1/10W	CNOUT	1-566-529-11	CONNI	CTOD	EDC /7	IE)	1 3D		
R217	1-216-041-00	MCIAL	Unir	470	3.6	1/10#		1-566-527-11							
2040	4 040 041 00	1 tomat	CHIE	470	TO.	4 (4 (18)									
R218	1-216-041-00			470		1/10W		1-566-530-11							
R219	1-216-069-00			6. 8K		1/10W	*******	********	*****	****	******	****	*****	******	
R220	1-216-069-00			6. 8K		1/10W		4 MOOD 044 A	T7T 4	14 PO	DD 0015	D1 D#			
R221	1-216-295-00			0	5%	1/10W	·	A-7063-211-A							
R226	1-216-295-00	METAL	CHIP	0	5%	1/10W			****	*****	******			000 series	(:
poon	1_216_205.00	METAL	CHID	0	5%	1/10W						(110	1. 110. 1	000 2011C3	,
R229	1-216-295-00					1/10W		3-947-274-11	FDAM	r pr	AD.				
	1-216-099-00						Ť	3-948-500-01				DINA			
R231	1-216-099-00			120K		1/10W		3-946-300-01	SURE	, DY	(SVIO)	RING	ı		
R232				82	5%	1/8W									
R233	1-216-095-00	METAL	CHIP	82K	5%	1/10W			< CA	PACITO	OR >				
R234	1-216-109-00	METAI	CHIP	330K	5%	1/10W	C101	1-126-157-11	ELEC'	Г	10u	F	20%	16V	
R236	1-216-295-00			0	5%	1/10W	C102	1-163-031-11						50V	
R237	1-216-295-00			0	5%	1/10W	C103	1-163-031-11						50V	
R238	1-216-295-00			0	5%	1/10W	C104	1-163-031-11						50V	
				0	5%	1/10W	C104	1-163-011-11					F 109		
R239	1-216-295-00	me IAI	, Unit	U	. 0.6	1/10#	0103	1 100-011-11	UERA	aio G	ILLE U. U	0130	II. IAY	307	
R240	1-216-089-00	METAL	CHIP	47K	5%	1/10W	C106	1-163-127-00	CERA	MIC C	HIP 270	PF	5%	50V	
R241	1-216-097-00			100K		1/10W	C115	1-163-031-11						50V	
R242	1-216-073-00			10K		1/10W	C116	1-163-031-11						50V	
R243	1-216-049-0			1K	5%	1/10W	C118	1-163-031-11						50V	
14-40	T PTO 049 0	- merical		211	0.0	-/	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	11							

## VI-111

C120 1-163-031-11 CERAMIC CHIP 12PF 5% 50V C191 1-163-131-00 CERAMIC CHIP 12PF 5% 50V C193 1-163-031-11 CERAMIC CHIP 0.01uF 50V C193 1-163-031-11 CERAMIC CHIP 0.01uF 50V C193 1-163-031-11 CERAMIC CHIP 0.01uF 50V C194 1-126-157-11 ELECT 100 C125 1-163-109-00 CERAMIC CHIP 47PF 5% 50V C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-241-11 CERAMIC CHIP 390 C195 1-163-11-100 CIPA CHIP 390 C195 1-163-11-10	9PF 53 6PF 53 00PF 53	)%	50V 50V
C120 1-163-095-00 CERAMIC CHIP 12PF 5% 50V C191 1-163-131-00 CERAMIC CHIP 39 C121 1-163-031-11 CERAMIC CHIP 0.01uF 50V C193 1-163-031-11 CERAMIC CHIP 0. C124 1-163-113-00 CERAMIC CHIP 68PF 5% 50V C194 1-126-157-11 ELECT 10 C125 1-163-109-00 CERAMIC CHIP 47PF 5% 50V C195 1-163-241-11 CERAMIC CHIP 39	. 01uF 0uF 20 9PF 53 6PF 59 00PF 53	0%	50V
C121 1-163-031-11 CERAMIC CHIP 0.01uF 50V C193 1-163-031-11 CERAMIC CHIP 0. C124 1-163-113-00 CERAMIC CHIP 68PF 5% 50V C194 1-126-157-11 ELECT 10 C125 1-163-109-00 CERAMIC CHIP 47PF 5% 50V C195 1-163-241-11 CERAMIC CHIP 30	OuF 20 9PF 53 6PF 53 00PF 53	0%	
C124 1-163-113-00 CERAMIC CHIP 68PF 5% 50V C194 1-126-157-11 ELECT 10 C125 1-163-109-00 CERAMIC CHIP 47PF 5% 50V C195 1-163-241-11 CERAMIC CHIP 39	9PF 53 6PF 53 00PF 53		
C125 1-163-109-00 CERAMIC CHIP 47PF 5% 50V C195 1-163-241-11 CERAMIC CHIP 39	6PF 59	6	L6V
0123 1 103 103 00 Obligatio Oliv. 111.	00PF 59		50V
	00PF 59		
C128 1-163-133-00 CERAMIC CHIP 470PF 5% 50V C196 1-163-111-00 CERAMIC CHIP 50		6	50V
C126 1-103-133-00 CERABIC CHIP 10	ann - C4	K	50V
C130 1-163 111 00 CERTAIN COLD SOCIETY COLD AT COLD AT COLD ACT COLD A	7PF 59	X .	50V
C131 1-124-038-11 ELECT 22df 200 100	9PF 59	X	50V
C200 1-124-E20-11 FIETT 25		0%	10V
C133 1-124-638-11 ELECT 22uF 20% 10V C200 1-124-638-11 ELECT 22uF			
C134 1-163-031-11 CERAMIC CHIP 0.01uF 50V C203 1-126-157-11 ELECT 1	OuF 2	0%	16V
C134 1-103-031-11 OLDERANIC OILL U. OLDER	OuF 2	0%	16V
C133 1-103-031-11 CERMING CHIT C. STALL	. 01uF		50V
0135 1 120 137 11 EEE01	. 01uF		50V
VIII 1 100 Ed. 11 Oblemit on 1			25V
C149 1-163-031-11 CERAMIC CHIP 0.01uF 50V C207 1-163-038-00 CERAMIC CHIP U			
C152 1-163-119-00 CERAMIC CHIP 120PF 5% 50V C208 1-163-038-00 CERAMIC CHIP 0	). 1uF		25V
CIST I 100 113 OO CERSAITO CHIL TECH.	). 01uF		50V
0133 1 103 113 00 0E123410 0111 0211 0 0 0 0 0 1 100 157 11 ELECT 1		:0%	16V
C154 1-164-005-11 CERAMIC CHIF U. 4741 257		.0%	16V
C133 1-120-137-11 ELECT 10tt 200 107		20%	50V
C156 1-126-157-11 ELECT 10uF 20% 16V C212 1-126-301-11 ELECT 1	-		
C157 1-163-031-11 CFRAMIC CHIP 0.01uF 50V C213 1-163-031-11 CERAMIC CHIP 0	0. 01uF		50V
CIST I 100 DOI II CEIGMIC CHIL		20%	16V
C158 1-163-031-11 CENAMIC CHIP O. Old		5%	50V
C138 1-120-137-11 ELECT 10th 200 175		5%	50V
V100 1 120 102 11 LELO1 0. But		20%	16V
C161 1-163-031-11 CERAMIC CHIP 0.01uF 50V C218 1-126-157-11 ELECT			
C162 1-126-157-11 ELECT 10uF 20% 16V C219 1-163-031-11 CERAMIC CHIP C	0. 01uF		50V
U102 1-120-137-11 ELECT 1001 2001 1 100 157 11 FLECT	10uF 2	20%	16V
C103 1-120-102-11 ELECT 3. Jul 200 101			50V
G103 1 120 137 11 LELO1 130 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		20%	6. 3V
CIDD 1-120-137-11 ELECT 1001 200 100		5%	50V
C167 1-163-031-11 CERAMIC CHIP 0.01uF 50V C223 1-163-115-00 CERAMIC CHIP 6	0212		
C168 1-164-004-11 CERAMIC CHIP 0. 1uf 10% 25V C224 1-163-031-11 CERAMIC CHIP (	0. 01uF		50 <b>V</b>
C100 1-104-004-11 CEMANIC CHIL C. Idi		5%	50V
C189 1-184-003-11 CERAMIC CHIP 0. 47th		20%	50V
C1/1 1-164-222-11 CERAMIC CHIF 0. 2241		20%	50V
C1/2 1-120-13/-11 ELECT 10tt 200 17		20%	50V
C173 1-126-163-11 ELECT 4.7uF 20% 50V C228 1-125-301-11 ELECT			
C174 1-126-157-11 ELECT 10uF 20% 16V C229 1-126-157-11 ELECT	10uF	20%	16V
C1/4 1-120 13/ 11 EEE01 1001	0. 01uF		50V
Olio I los oci il calculato dilla di calculata dilla di		5%	50V
01/0 1 120 10/ 11 11101		5%	50V
C1// 1-104-102-11 CERAMIC CHILD	0. 01uF		50V
C178 1-163-023-00 CERAMIC CHIP 0.015uF 5% 50V C234 1-163-031-11 CERAMIC CHIP	0.014		
C179 1-124-638-11 ELECT 22uF 20% 10V C235 1-163-239-11 CERAMIC CHIP	33PF	5%	50V
TOTAL TIEF BOOT I EBBOT CUID	22PF	5%	50V
OLOG 1 100 COL 11 CENTRAL COLLEGE COLL	0. 01uF		50V
CID1 1-103-121-00 CERAMIC CHIT 13011 00 00 00 1 103 031 11 CEDAMIC CHID	0. 01uF		50V
102 1-128-134-11 ELECT 4/dt 200 1.1 CEPLING CUID		10%	50V
C185 1-124-638-11 ELECT 22uF 20% 10V C239 1-164-182-11 CERAMIC CHIP	U. 0000ui	10%	
C186 1-163-031-11 CERAMIC CHIP 0.01uF 50V C240 1-163-115-00 CERAMIC CHIP	82PF	5%	50V
COAL 1-152-021-11 CEDAMIC CUID	0. 01uF		50V
100 1-120 137 11 EEE01 100 100 CEPLINIC CUID	47PF	5%	50V
C100 1 120 137 11 CELO1 2001		5%	50V
C189 1-163-031-11 CERAMIC CHIP 0.01uF 50V   C243 1-163-117-00 CERAMIC CHIP		-	

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Descr	ription	Remark	
C244	1_163_031_11	CERAMIC CHIP	0. 01uF		50V			< DIG	DE >		
C245		CERAMIC CHIP	0. 022uF	10%	25V						
C246		CERAMIC CHIP	120PF	5%	50V	D101	8-719-800-76	DIODE	1SS226		
C247		CERAMIC CHIP	68PF	5%	50 <b>V</b>	D102	8-719-400-18	DIODE	MA152WK		
C248		CERAMIC CHIP	56PF	5%	50V	<b>△</b> D501	8-719-975-41	DIODE	RB411D		
0240	1 103 111 00	OLIUMITO SIIII	0011			D502	8-719-105-91	DIODE	RD5. 6M-1	32	
C249	1_163_125_00	CERAMIC CHIP	220PF	5%	50V	D505	8-719-104-34	DIODE	1S2836		
C250		CERAMIC CHIP	0. 01uF	0.0	50V						
C251		CERAMIC CHIP	150PF	5%	50V			< FII	LTER >		
C251		CERAMIC CHIP	390PF	5%	50V						
C252		CERAMIC CHIP	33PF	5%	50V	FL103	1-236-757-21	FILT	ER, LOW PAS	S (C)	
0233	1-100 200 11	OLIZANIO OIII	0011	0.4		· ·	1-236-575-11				
C255	1-163-116-00	CERAMIC CHIP	91PF	5%	50V	FL105	1-236-146-11	FILT	ER, BAND PA	SS	
C256		CERAMIC CHIP	47PF	5%	50V						
C501	1-126-157-11		10uF	20%	16V			< IC	>		
	1-126-157-11		10uF	20%	16V						
C504 C505		CERAMIC CHIP	0. 01uF	2010	50V	10101	8-752-054-87	IC	CXA1207AQ		
6363	1-102-031-11	CENAMIC CHII	u. urui		001		8-752-332-68		CXL5502M		
acon	1 100 000 00	CEDAMIC CUID	0. 1uF		25V		8-752-039-34		CXA1208Q		
C627		CERAMIC CHIP			25V		8-759-100-96		uPC4558G2		
C628		CERAMIC CHIP	0. 1uF	200		10101	0 700 200 00		u		
C629	1-126-157-11		10uF	20%	16V			< CO	11 >		
C630	1-126-157-11		10uF	20%	16V						
C640	1-124-638-11	LELECT	22uF	20%	10V	1101	1-408-978-21	TNINI	מחדים	47uH	
					4.071	L101				820uH	
C701	1-126-177-1		100uF	20%	10V	L102	1-410-072-21			180uH	
C702	1-163-038-00	CERAMIC CHIP	0. 1uF		25V	L103	1-408-985-21				
C704	1-126-163-1		4. 7uF	20%	50V	L107	1-407-169-XX			100uH	
C705	1-163-038-0	O CERAMIC CHIP	0. 1uF		25V	L109	1-408-975-21	I INDU	CTOK	27uH	
C706	1-126-163-13	1 ELECT	4. 7uF	20%	50V					40.11	
						L110	1-408-970-23			10uH	
C707	1-164-004-1	1 CERAMIC CHIP	0. 1uF	10%	25V	L111	1-408-972-2			15uH	
C708	1-164-004-1	1 CERAMIC CHIP	0. 1uF	10%	25V	L113	1-407-169-X			100uH	
C709	1-163-109-0	O CERAMIC CHIP	47PF	5%	50V	L114	1-408-978-2	1 INDU	CTOR	47uH	
C713	1-126-157-1	1 ELECT	10uF	20%	16V	L116	1-408-983-2	1 INDU	JCTOR	120uH	
C714	1-163-031-1	1 CERAMIC CHIP	0.01uF	•	50V						
						L117	1-408-987-2	1 IND	JCTOR	330uH	
C715	1-163-031-1	1 CERAMIC CHIP	0. 01uF		50V	L119	1-408-970-2	1 INDU	JCTOR	10uH	
C720	1-126-157-1		10uF	20%	16V	L120	1-408-978-2	1 IND	JCTOR	47uH	
0,20						L121	1-408-978-2	1 IND	JCTOR	47uH	
		< FILTER >				L122	1-408-979-2	1 INDU	UCTOR	56uH	
CF10	1 1-567-727-1	1 FILTER, CERA	MIC			L123	1-408-979-2	1 IND	UCTOR	56uH	
01.10						L124	1-408-978-2	1 IND	UCTOR	47uH	
		< CONNECTOR	>			L125	1-408-978-2	1 IND	UCTOR	47uH	
						L126	1-410-988-1	1 IND	UCTOR CHIP	0. 39uH	
+ CN50	1 1-691-083-1	11 HOUSING, COM	NECTOR 24P	)		L127	1-410-988-1	1 IND	UCTOR CHIP	0. 39uH	
+ CNSC	2 1-691-072-1	11 HOUSING, CON	NECTOR 13P	)							
CNSC	4 1-568-079-1	1 CONNECTOR (F	RECEPTALE)	20P		L128	1-410-988-1	1 IND	UCTOR CHIP	0. 39uH	
+ CN50	£ 1-560-305-1	11 PIN, CONNECT	TOR (PC BOA	ARD) 1	DP .	L129	1-410-988-1	1 IND	UCTOR CHIP	0. 39uH	
		11 PIN, CONNECT		140/ 1	••	L130	1-410-988-1	1 IND	UCTOR CHIP	0. 39uH	
+ CNO	8 1-304-076-	II FIR, CORRECT	tolt of			L131	1-410-988-1			0. 39uH	
CNE	0 1 FC4 COD	11 DIN CONNEC	מהו מחד			L133	1-408-978-2			47uH	
		11 PIN, CONNECTOR									i
		11 CONNECTOR (				L134	1-408-974-2	21 IND	UCTOR	22uH	
		11 CONNECTOR (				L135	1-408-974-2			22uH	
CN5	J 1-506-4/0-	11 PIN, CONNEC	ion ar			L136	1-407-169-1			100uH	
						L137	1-408-966-2			4. 7uH	
						L138	1-407-169-			100uH	
						1 1730	1 401-103-1	INT THE	,5010lt	100411	
						The	components id	entifi	ied by Les	composants identifiés	
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							. A are crit		for cri	tiques pour la sécurité	
							ty. Replace o			les remplacer que par u	ne pi⊭ce
						1	number speci		por	tant le numéro spécifié	
						1 5010	op vot		1.5.		

Ref. No.	Part No.	Description		Remark	Ref. No.	Part No.	Description	_		Remark	
L139	1-408-984-21	INDUCTOR	150uH		Q505	8-729-422-27	TRANSISTOR	2SD601A-	Q		
L140	1-407-169-XX	INDUCTOR	100uH		Q609	8-729-402-84	TRANSISTOR	XN4601			
L141	1-408-983-21	INDUCTOR	120uH		Q610	8-729-402-84	TRANSISTOR	XN4601			
L142	1-408-974-21	INDUCTOR	22uH		Q611	8-729-422-27	TRANSISTOR	2SD601A-	Ĵ		
L143	1-408-987-21	INDUCTOR	330uH		Q701	8-729-402-81	TRANSISTOR	XN4501			
L144	1-408-974-21	INDUCTOR	22uH		Q703	8-729-421-90	TRANSISTOR	XN4113			
L501	1-408-978-21		47uH		Q704	8-729-902-XX	TRANSISTOR	UN2215			
L604	1-408-978-21		47uH		Q705	8-729-422-54	TRANSISTOR	XN4215			
L605	1-408-978-21		47uH								
		/ mp.10010000					< RESISTOR	>			
		< TRANSISTOR	. >		R101	1-216-073-00	METAL CHIP	10K	5%	1/10W	
Q101	R-729-101-07	TRANSISTOR	2SB798-DL		R102	1-216-065-00		4. 7K	5%	1/10W	
Q102	8-729-421-19		UN2213		R104	1-216-295-00		0	5%	1/10W	
Q104	8-729-422-27		2SD601A-Q		R105	1-216-081-00		22K	5%	1/10W	
Q104 Q105	8-729-422-27		2SD601A-Q		R106	1-216-081-00		22K	5%	1/10W	
Q103 Q112	8-729-102-07		2SC2223-F13		11200	1 210 001 00	MEETING OILL	2			
4112	0 120 102 01	Hembibion	2502220 120		R107	1-216-049-00	METAL CHIP	1K	5%	1/10W	
Q114	8-729-422-27	TRANSISTOR	2SD601A-Q		R108	1-216-049-00		1K	5%	1/10W	
Q114 Q116	8-729-424-18		UN2113		R109	1-216-029-00		150	5%	1/10W	
	8-729-424-10		2SD601A-Q		R110	1-216-069-00		6. 8K	5%	1/10W	
Q118 Q119	8-729-422-27		2SD601A-Q		R111	1-216-077-00		15K	5%	1/10W	
Q120	8-729-403-02		XN4212								
<b>4</b>					R112	1-216-049-00	METAL CHIP	1K	5%	1/10W	
Q121	8-729-402-84	TRANSISTOR	XN4601		R113	1-216-043-00	METAL CHIP	560	5%	1/10W	
Q123	8-729-422-27		2SD601A-Q		R114	1-216-035-00	METAL CHIP	270	5%	1/10W	
Q126	8-729-422-27		2SD601A-Q		R115	1-216-295-00	METAL CHIP	0	5%	1/10W	
Q127	8-729-422-27		2SD601A-Q		R126	1-216-081-00	METAL CHIP	22K	5%	1/10W	
Q128	8-729-422-27		2SD601A-Q								
<b>4</b>					R127	1-216-081-00	METAL CHIP	22K	5%	1/10W	
Q129	8-729-403-24	TRANSISTOR	XN4210		R128	1-216-033-00	METAL CHIP	220	5%	1/10W	
Q130	8-729-422-36	TRANSISTOR	2SB709A-Q		R129	1-216-021-00	METAL CHIP	68	5%	1/10W	
Q132	8-729-421-19	TRANSISTOR	UN2213		R130	1-216-071-00	METAL CHIP	8. 2K		1/10W	
Q133	8-729-424-08	TRANSISTOR	UN2111		R131	1-216-043-00	METAL CHIP	560	5%	1/10W	
Q134	8-729-420-20	TRANSISTOR	XN4312		-	4 040 045 00	AMPRIL GUID		rev	1 /1000	
****		mp.i.ic.romob	IMOOTO		R132	1-216-045-00 1-216-053-00		680 1. 5K	5% 5%	1/10W 1/10W	
Q135	8-729-421-19		UN2213		R134			0 0	5%	1/10W	
Q140	8-729-422-27		2SD601A-Q		R135	1-216-295-00			5%	1/10W	
Q141	8-729-403-02		XN4212		R136	1-216-081-00		22K	5%	1/10W	
Q142		7 TRANSISTOR	2SD601A-Q 2SD601A-Q		R137	1-216-081-00	METAL UNIP	22K	3/6	1/10#	
Q143	8-129-422-2	7 TRANSISTOR	Z2D00TW_6		R138	1-216-049-00	METAL CHIP	1K	5%	1/10W	
0144	0_720_402_9	1 TRANSISTOR	XN4501		R139	1-216-039-00			5%	1/10W	
Q144		6 TRANSISTOR	2SB709A-Q		R141	1-216-053-00				1/10W	
Q145			2SB709A-Q		R142	1-216-295-00			5%	1/10W	
Q147		6 TRANSISTOR 7 TRANSISTOR	2SD601A-Q		R143	1-216-073-00			5%	1/10W	
Q148 Q149		7 TRANSISTOR	2SD601A-Q 2SD601A-Q		11113	1 210 010 00		2011		-,	
6149	0 123 425-2	. 1167/0101011	PUNOTU &		R144	1-216-033-00	METAL CHIP	220	5%	1/10W	
Q150	8-729-422-2	7 TRANSISTOR	2SD601A-Q		R145	1-216-033-00			5%	1/10W	
Q151		2 TRANSISTOR	XN4213		R147	1-216-037-00			5%	1/10W	
Q151 Q152		7 TRANSISTOR	2SD601A-Q		R148	1-216-049-06			5%	1/10W	
Q152 Q156		9 TRANSISTOR	UN2213		R149	1-216-047-0			5%	1/10W	
Q157		6 TRANSISTOR	2SB709A-Q			, ••••					
4.01					R150	1-216-295-0	O METAL CHIP		5%	1/10W	
Q158	8-729-422-2	7 TRANSISTOR	2SD601A-Q		R151	1-216-065-0	O METAL CHIP	4. 7K	5%	1/10W	
Q159		8 TRANSISTOR	UN2111		R154		O METAL CHIE		5%	1/10W	
<b>∆Q504</b>		7 TRANSISTOR	2SB798-DL		R155	1-216-049-0	O METAL CHIE	1K	5%	1/10W	
					The	components ide	ntified by	Les compos	ante	identifiés	
					1	⚠ or dotted		par une ma			
						⚠ are criti		•		la sécurité	
	•					ty. Replace on	•			r que par ue	pièce
						number specif	-	portant le	nume	ro spécifié	

Ref. No.	Part No.	Descri	iption			Remark	Ref. No.	Part No.	Descr	iption			Remark
R156	1-216-295-00	METAL.	CHIP	0	5%	1/10W	R241	1-216-051-00	METAL	CHIP	1. 2K	5%	1/10W
R157	1-216-041-00			470	5%	1/10W	R243	1-216-035-00	METAL	CHIP	270	5%	1/10W
R158	1-216-041-00			470	5%	1/10W	R244	1-216-081-00			22K	5%	1/10₩
R176	1-216-295-00			0	5%	1/10W	R245	1-216-049-00			1K	5%	1/10₩
R177	1-216-081-00			22K	5%	1/10W	R246	1-216-039-00			390	5%	1/10W
									14PPRA1	CUID	200	F@	1/10W
R178	1-216-081-00			22K	5%	1/10W	R247	1-216-039-00			390	5% 5%	1/10W
R179	1-216-041-00			470	5%	1/10W	R248	1-216-049-00			1K		
R180	1-216-041-00			470	5%	1/10W	R249	1-216-295-00			0	5%	1/10W
R182	1-216-041-00	METAL	CHIP	470	5%	1/10W	R251	1-216-095-00			82K	5%	1/10W
R183	1-216-033-00	METAL	CHIP	220	5%	1/10W	R252	1-216-049-00	METAL	CHIP	1K	5%	1/10₩
R184	1-216-025-00	METAL	CHIP	100	5%	1/10W	R253	1-216-121-00	METAL	CHIP	1M	5%	1/10W
R185	1-216-047-00	METAL	CHIP	820	5%	1/10W	R254	1-216-053-00	METAL	CHIP	1. 5K	5%	1/10W
R186	1-216-047-00	METAL	CHIP	820	5%	1/10W	R255	1-216-295-00	METAL	CHIP	0	5%	1/10₩
R187	1-216-083-00			27K	5%	1/10W	R256	1-216-295-00	METAL	CHIP	0	5%	1/10W
R188	1-216-295-00			0	5%	1/10W	R257	1-216-085-00	METAL	CHIP	33K	5%	1/10W
D1 00	1-216-073-00	METAL	CUID	10K	5%	1/10W	R258	1-216-091-00	METAL.	CHIP	56K	5%	1/10W
R190	1-216-073-00			10K	5%	1/10W	R259	1-216-041-00			470	5%	1/10W
R191	1-216-073-00			2. 2K		1/10W	R260	1-216-049-00			1K	5%	1/10W
R192	1-216-037-00			47K	5%	1/10W	R261	1-216-049-00			1K	5%	1/10W
R193				10K	5%	1/10W	R262	1-216-057-00			2. 2K		1/10W
R194	1-216-073-00	METAL	GHIP	IUN	34	1/10#	11202	1 210 037 00	ML I AL	OHLI	2. 21		1, 10
R195	1-216-073-00	METAL	CHIP	10K	5%	1/10W	R263	1-216-057-00	METAL	CHIP	2. 2K	5%	1/10W
R196	1-216-049-00	METAL	CHIP	1K	5%	1/10W	R264	1-216-041-00	METAL	CHIP	470	5%	1/10W
R197	1-216-049-00	METAL	CHIP	1K	5%	1/10W	R265	1-216-041-00	METAL	CHIP	470	5%	1/10W
R198	1-216-049-00	METAL	CHIP	1K	5%	1/10W	R266	1-216-057-00	METAL	CHIP	2. 2K	5%	1/10W
R202	1-216-089-00	METAL	CHIP	47K	5%	1/10W	R269	1-216-065-00	METAL	CHIP	4. 7K	5%	1/10W
R204	1-216-047-00	METAL	CHIP	820	5%	1/10W	R270	1-216-065-00	METAL	CHIP	4. 7K	5%	1/10W
R205	1-216-049-00			1K	5%	1/10W	R271	1-216-065-00			4.7K		1/10W
R206	1-216-295-00			0	5%	1/10W	R273	1-216-699-11					1/10W
R207	1-216-699-11			_		1/10W	R274	1-216-049-00			1K	5%	1/10W
R208	1-216-113-00			470K		1/10W	R275	1-216-069-00			6. 8K	5%	1/10W
2000	4 040 404 00		aurb	416	re.	1 /1 OF	D276	1-216-067-00	METAI	CUID	5. 6K	59	1/10W
R209	1-216-121-00			1M	5%	1/10W	R276 R277	1-216-041-00			470	5%	1/10W
R212	1-216-049-00			1K	5%	1/10W	R278	1-216-057-00			2. 2K		1/10W
R213	1-216-049-00			1K	5%	1/10W	R279	1-216-037-00			8. 2K		1/10W
R218	1-216-071-00			8. 2K		1/10W	R280	1-216-063-00			3. 9K		1/10W
R219	1-216-061-00	METAL	CHIP	3. 3K	3%	1/10W	1,200	1-210-003-00	METAL	UIIIF	J. 3N	JA	1/10#
R220	1-216-071-00	METAL	. CHIP	8. 2K		1/10W	R281	1-216-069-00			6. 8K		1/10W
R221	1-216-653-11	1 METAL	CHIP	1. 2K	0.5%	1/10W	R282	1-216-061-00			3. 3K	5%	1/10W
R222	1-216-643-13	METAL	CHIP	470	0.5%	1/10W	R285	1-216-057-00	METAL	CHIP	2. 2K	5%	1/10W
R223	1-216-295-00	METAL	. CHIP	0	5%	1/10W	R287	1-216-295-00	METAL	CHIP	0	5%	1/10W
R231	1-216-663-1	1 METAL	. CHIP	3. 3K	0.5%	1/10W	R291	1-216-025-00	METAL	. CHIP	100	5%	1/10₩
R232	1-216-049-0	N METAL	CHIP	1K	5%	1/10W	R292	1-216-051-00	METAL	CHIP	1. 2K	5%	1/10W
R232				270	5%	1/10W	R293	1-216-057-00			2. 2K		1/10W
R234	1-216-065-0			4. 7K		1/10W	R294	1-216-051-00			1. 2K		1/10W
R235				820	5%	1/10W	R296	1-216-049-00			1K	5%	1/10W
R236				820	5%	1/10W	R297	1-216-065-00			4. 7K		1/10W
				000	ra.		Dana	1_910 000 00	MEMAI	מזווים	n	E.	1 /100
R237				820	5% 5%	1/10W	R298	1-216-295-00			0 4 7 K	5% 5 <b>*</b>	1/10W
R238				470	5%	1/10W	R299	1-216-065-00 1-216-025-00			4. 7K		1/10W
R239				470	5%	1/10W	R300				100	5% 5*	1/10W
R240	1-216-041-0	U META	L CHIP	470	5%	1/10W	R301	1-216-057-0	J ME IAI	L CHIP	2. 2K	3%	1/10W

Ref. No.	Part No.	Descr.	iption			Remark	Ref. No.	Part No.	Descr	iptio	n		Remark
R302	1-216-057-00	METAI.	CHIP	2. 2K	5%	1/10W	R708	1-216-057-00	METAL	CHIP	2. 2	K 5%	1/10W
R303	1-216-295-00			0	5%	1/10W	R709	1-216-049-00				5%	1/10W
R305	1-216-295-00			Õ	5%	1/10W		1-216-097-00				K 5%	1/10W
				1K	5%	1/10W	R711	1-216-073-00					1/10W
R306	1-216-049-00			1. 2K		1/10W	R712	1-216-073-00					1/10W
R307	1-216-051-00	METAL	Unir	1. 2N	3.6	1/10#	11.12	1 210 070 00	HALL ATAL	01111	20		-,
R308	1-216-041-00	METAL.	CHIP	470	5%	1/10W	R713	1-216-073-00	METAL	. CHIP	10K	5%	1/10W
R311	1-216-049-00			1K	5%	1/10W	R714	1-216-069-00	METAL	CHIP	6. 8	K 5%	1/10W
R312	1-216-295-00			0	5%	1/10W	R715	1-216-109-00				K 5%	1/10W
	1-216-293-00			10K		1/10W	R716	1-216-079-00					1/10W
R313				4. 7K		1/10W	R717	1-216-073-00					1/10W
R315	1-216-065-00	MEIAL	Unir	4. / N	JA	1/10#	1	1 210 010 00	1110 2111				•
R320	1-216-295-00	METAL	CHIP	0	5%	1/10₩	R723	1-216-073-00					1/10W
R322	1-216-043-00	METAL	CHIP	560	5%	1/10₩	R745	1-216-065-00				K 5%	1/10W
R323	1-216-063-00	METAL	CHIP	3. 9K	5%	1/10₩	R746	1-216-089-00	METAL	. CHIF	47K	5%	1/10W
R324	1-216-295-00			0	5%	1/10W	R748	1-216-295-00	METAL	. CHIE	0	5%	1/10W
R325	1-216-049-00			1K	5%	1/10W	R749	1-216-295-00	METAL	CHIE	0	5%	1/10W
R326	1-216-057-00	METAL	CHIP	2. 2K	5%	1/10W			< VAI	RIABLE	RESISTOR	<b>?</b> >	
R327	1-216-063-00			3. 9K	5%	1/10W							
R502	1-216-065-00			4. 7K	5%	1/10W	RV101	1-238-088-11	RES,	ADJ,	CERMET	2. 2K	
R503	1-216-642-11			430		1/10₩	RV102	1-238-086-11	RES.	ADJ,	CERMET	470	
R504	1-216-651-11			1K		1/10W		1-238-091-11				22K	
1004	1 210 031 11	MLIM	Ollis	711	u. 0.	1, 10		1-238-092-11				47K	
DEUE	1-216-666-11	METAI	CHID	4 3K	0.5%	1/10W		1-238-091-11				22K	
R505	1-216-089-00			4. JK		1/10W		1 200 001 11	100,	,			
R510				0	5%	1/10W	PV107	1-238-088-11	RES	AD.I	CERMET	2. 2K	
R511	1-216-295-00			0		1/10W		1-238-089-11				4. 7K	
R515	1-216-295-00					1/10W		1-238-088-11				2. 2K	
R516	1-216-295-00	MEIAL	CHIP	0	5%	1/10#		1-238-086-11				470	
			aurn	4 517	may	4 /4 OFF						470	
R517	1-216-065-0			4. 7K		1/10W	KVIIZ	1-238-086-11	nea,	ADJ,	CERMEI	470	
R520	1-216-295-0			0	5%	1/10W			/ (20)	TTOIL			
R526	1-216-295-0			0	5%	1/10W			( 2M	ITCH	,		
R536	1-216-295-0			0	5%	1/10W	2504	4 554 000 00	CHILLIA	O11 1/	ry noanh	(01)	
R537	1-216-295-0	O METAI	CHIP	0	5%	1/10W	5501	1-554-088-00	) 2#11	CH, K	LI BUARD	(UL)	
R538	1-216-295-0	O METAI	CHIP	0	5%	1/10W			< VI	BRATO	R >		
R636	1-216-295-0			0	5%	1/10W	İ						
R637	1-216-081-0			22K	5%	1/10W	X101	1-577-080-11	VIBR	ATOR.	CRYSTAL.	(3. 58MHz	z)
	1-216-031-0			100	5%	1/10W		*********					
R638				2. 2K		1/10W							
R639	1-216-057-0	U MEIA	L UHIP	Z. Zn	3.0	1/10#							
R640	1-216-057-0	O META	L CHIP	2. 2K	5%	1/10W							
R641	1-216-309-0					1/10W							
R642	1-216-309-0	-		5. 6	5%	1/10W							
R644	1-216-020-0			62	5%	1/10W							
R645	1-216-049-0			1K	5%	1/10W							
10.10					•								
R646	1-216-051-0	O META	L CHIP		5%	1/10W							
R647	1-216-057-0	O META	T CHIL	2. 2K	5%	1/10W							
R649	1-216-295-0	O META	L CHIP	0	5%	1/10W							
R701				330	5%	1/10W							
R702					5%	1/10W							
	4 442 225				, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	4 /4 000							
R704					5%	1/10W							
R705					5%	1/10W							
R706					5%	1/10W						•	
R707	1-216-083-6	00 META	AL CHIP	27K	5%	1/10W	I						

3-947-297-01 CUSHION (RIGHT) 3-947-298-01 CUSHION (LEFT) Ref. No. Part No. Description

#### Remark

# HARDWARE LIST

#1	7-627-553-37	SCREW	(M2X3).	SPECIAL	HEAD
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#2 7-627-555-88 SCREW (M1. 4X1. 8)

#3 7-621-772-10 SCREW +B 2X4

#4 7-627-553-68 SCREW, PRECISION +P 2X6 TYPE3

The components identified by mark A or dotted line with mark. A are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pik € portant le numéro spécifié.

## **SECTION 8** SERVICE MODE

☆This unit uses the EVR (Electronic Variable Resistor) for performing adjustments and tests. These functions are implemented by the SENSER LANC system.

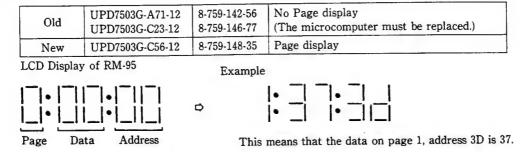
#### 8-1. SENSER LANC

SENSER LANC is the LANC format designed to perform EVR (electronic variable resistor) adjustments and various tests for this 8mm VTR by using the LANC (Control L). The SENSER LANC is synonymous with the old SERVICE LANC. But there have been enhancements and the SENSER LANC is now used as a unified word.

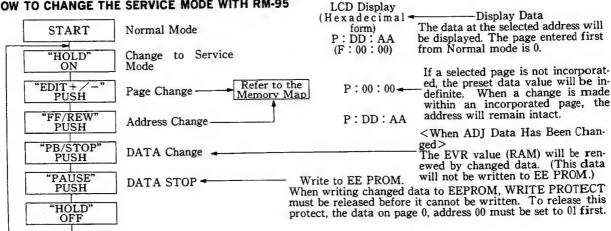
## 8-2. HOW TO USE THE RM-95 JIG (ADJUSTMENT REMOTE CONTROL)

The RM-95 jig is used to operate the SENSER LANC. This jig will create the SENSER LANC Mode. Because of this, the HOLD switch has been modified for service purpose.

Note that the old models of the RM-95 have no page display function and it is needed to replace their microcomputers within these old models.

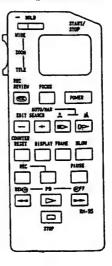


## 8-3. HOW TO CHANGE THE SERVICE MODE WITH RM-95

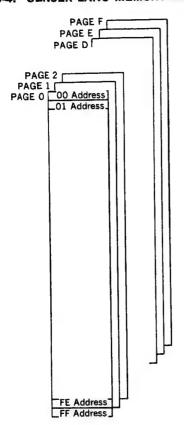


RM-95 (J-6082-053-B)

Command	Action	RM-95 Control Button Pushed
Page Up	Page+1	Edit Search+
Page Down	Page-1	Edit Search-
Direct Page Set	Sets to specified page.	Event Clear
Address Up	Address+1	Fast Forward
Address Down	Address-1	Rewind
Data Up	Data+1	Play Back
Data Down	Data-1	Stop
Store	Writes data to EEPROM. RAM	Pause



## 8-4. SENSER LANC MEMORY MAP



This unit has pages 0 to F allocated as listed below.

PAGE	Page Allocation
0	Service
1	
2	System Controler
3	System Controler
4	System Controler
5	
6	
7	Timer/Tuner Controler
8	Timer/Tuner Controler
9	Timer/Tuner Controler
Α	
В	
С	
D	
E	
F	

Note: This set has no EE-PROM built-in and so it has no "D page"

#### 8-5. TEST MODE SETTING

Variety of test modes are established and changed as listed below.

Page 0	Address 02

Data	Function					
00	Normal					
Test Mode 1 Various Emergencies, Inhibit and Release 01 Drum, Capstan, Loading Motor, Reel, Top and End, DEW SP/LP Automati scrimination Inhibit, Manual Changeove						
02	Test Mode 2  • Playback Frequency Characteristic 1'ch Adjustment  With the ATF servo shifted one track, playback tape and allow taking RF on 1 channel. (This is valid only in playback mode.)  SP/LP is protected from being distinguished and REC SP/LP followed.					
03	Test Mode 3 Track Shift Playback  • With a forward shift of 1/3 to 1/4 track, playback tape. (This is valid only in playback mode.)  SP/LP is protected from being distinguished and REC SP/LP is followed.					

<sup>\*</sup> After completing necessary adjustments/repairs, be sure to return the data at this address to 00.

#### 8-6. EMERGENCY CODES

These codes can be used to check the condition of failure (abnormality) that occurred.

Page 0	Address 07
1 age 0	11441050 01

#### Last Emergency Code

- .... The code of the last failure that occurred (This data will be renewed each time a failure occurs.
- \*When the RESET button on the main body is pressed and when the AC power is disconnected, the emergency code data will be reset to "00".

	be reset to oo .	
Code	Condition of Failure	
00	No Failure	
01	Loading Motor Failure	
02	Reel Failure during Unloading	
03	Reel Failure during operation other than unloading	
04	Capstan Failure	
05	FG Failure at Start of Drum	
06	PG no Failure at Start of Drum	
07	FG Failure when Drum is Stationary	
08	FG Failure at Start of Drum during loading	
09	PG no Failure at Start of Drum during loading	
0A	FG Failure when Drum is Stationary during loading	
0B	FG Failure at Start of Drum during unloading	
0C	PG no Failure at Start of Drum during unloading	
0D	FG Failure when Drum is Stationary during unloading	

#### 8-7. EMERGENCY MODE

This mode allows you to check the mode of operation in which the VTR was placed when failure occurred.

Page 0	Address 09

Last Emergency Code

.... The code of the last failure that occurred
(This data will be renewed each time a failure occurs.)

\*When the RESET button on the main body is pressed and when the AC power is disconnected, the emergency code data will be reset to "00".

uata wii	The reset to to.
Code	Condition of Failure
10	EJECTED
20	STOP
26	STOP TAPE END
27	STOP TAPE TOP
29	STOP ZERO
30	FF
33	FF ZERO PB
34	FF ZERO STOP
38	REW
3A.	REW PB
3B	REW ZERO PB
3C	REW ZERO STOP
40	REC
41	REC PAUSE
42	TIMER REC
43	TIMER REC PAUSE
48	A INSERT
49	A INSERT PAUSE
60	РВ
62	+1
63	-1
64	CUE
65	REVIEW
66	+2
67	-1
68	LOCKED CUE
69	LOCKED REVIEW

Code	Condition of Failure
70	+STILL
71	-STILL
72	+SLOW, +SLOW 1/5
73	-SLOW, -SLOW 1/5
74	+SLOW 1/10
75	-SLOW 1/10
76	+FRAME
77	-FRAME

## 8-8. RF SWITCHING POSITION ADJUSTMENT MODE

When adjusting the RF switching position, set up as follows:

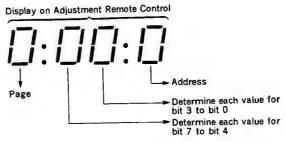
P	age 7		Address 80	
	Data		Function	
	00	Normal		

Switching position adjustment mode

## 8-9. DETERMINATION OF BIT VALUE

05

For the following items, the data displayed on the adjustment remote control is used to determine the bit ralue. The list below should be checked to determine whether the bit value is "1" or "0".



	Bit Value			
Display on Remote Control	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0

	Diamlass		Bit \	/alue	*
	Display on Remote Control	bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	9	1	0	0	1
	A (□)	1	0	1	0
	B (¦⊐)	1	0	1	1
	C (=)	1	1	0	0
	D (□¦)	1	1	0	1
∄→	E(E)	1	1	1	0
	F (⊨)	1	1	1	1

(Example) If the data displayed on the remote control is "8E", the values for bit 7 to bit 4 can be determined from the values in the column ③. The value for bit 3 to bit 0 can be determined from the values in the column ③.

## 8-10. 0 PAGE MEMORY MAP

Adjustment Address	Contents	Remarks
00	Not used	
01	Not used	
02	Test Mode (COSMO)	
03	Switching Position Data (LOW)	Read only
04	Switching Position Data (HIGH)	Read only
05		
06		
07	Emergency Code (LAST)	
08		
09	Emergency Mode (LAST)	
0A		
0B		
0C .		
0D		
0E		
0F		



# SECTION 9 MECHANICAL ADJUSTMENTS

### For Mechanical Adjustments

For the procedures how to adjust and check the mechanism, as well as how to replace mechanical parts, refer to the separate 8mm Video Mechanical Adjustment Manual III (9-972-732-01).

However, for the procedures how to set the Track Shift mode, refer to the following text.

#### 9-1. TAPE PASS ADJUSTMENT

#### (TRACK SHIFT)

The 8mm Video Tape Recorder system uses the AFT (Automatic Track Finding) function in which four different pilot signals are used for controlling the tape speed instantaneously to provide high precision tracking. This eliminates the Tracking Adjustment control, thus allowing accurate tracing.

In spite of its advantageous feature, the AFT system may have a difficulty in adjusting the tape pass system. The ATF will automatically corrects tracing even if the head has only a little tracing distortion. This may make it impossible to perform a complete adjustment.

Therefore, when performing a fine adjustment for tracking, the Track Shift mode should be entered before starting this adjustment. This mode will force to operate the ATF to shift the amount of tracking by a given quantity (approximately 1/4), so that tracking can be easily fine adjusted. Furthermore, no track shift jig is needed.

## 9-1-1. Setting the Track Shift Mode

- Place the adjustment remote control RM-95 (J-6082-053-B) in the HOLD ON position.
- 2) Operate the EDIT+/— button to select adjustment page
- 3) Operate the FF/REW button to select adjustment address  $\bigcup_{i=1}^{n-1} I_i$ .
- 4) Operate the PB/STOP button to set to adjustment data  $\Box \Box \Box$ . (This will go to the Test Mode 3 (Pass Adjustment).)
- Note 1 :For details of the Test Mode, refer to "SECTION 8. SERVICE MODE."
- Note 2: If the LP mode is recognized by the system wrongly, operate the Recording Time SP/LP button to enter the SP mode.
- Note 3: After adjustment, operate the PB/STOP button to reset to adjustment data [7]. Place the remote control in the HOLD OFF position to return to the normal mode.

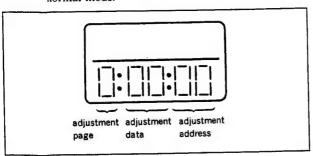


Fig. 9-1.

## 9-1-2. Preparation before Adjustment

- Clean the surfaces over which tape moves past (of the tape guides, drum, capstan shaft and pinch rollers).
- 2) Oscilloscope Connection and Waveform Output: 1 ch: Drum head's RF signal output, RP-134 board CN003 pin ③ (PB RF) External trigger input: RP-134 board CN003 pin ④ (RF SWP) GND: RP-134 board CN003 pin ② (GND)
- 3) Play back alignment tape for tracking (WR5-1NP).
- 4) Check that RF waveform observed on the oscilloscope is flat on both entrance and exit sides.
  - If not flat, perform necessary adjustment according to the separate 8 mm Video Mechanical Adjustment III.

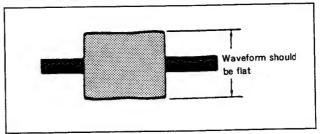


Fig. 9-2.

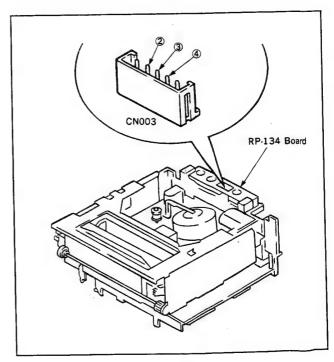


Fig. 9-3.



# SECTION 10 ELECTRICAL ADJUSTMENTS

See the adjusting part location diagram from on page 140 for the adjustment.

For details of the SENSER LANC , refer to "SECTION 8. SERVICE MODE".

## 10-1. PREPARATION BEFORE ADJUSTMENT 10-1-1. Equipment Required

The measuring instruments used for this alignment include:

- 1) Monitor TV
- Oscilloscope, dual-trace, bandwidth of 30MHz or more, with delay mode (A probe 10:1 should be used unless otherwise specified.)
- 3) Frequency counter
- 4) Pattern generator (with Video Output terminal; refer to Section 10-1-2. Equipment Connection.)
- 5) Digital voltmeter
- 6) Audio generator
- 7) Audio level meter
- 8) Audio distortion meter
- 9) Audio attenuator
- 10) Vector scope
- 11) Alignment tapes
  - For tracking adjustment (WR5-1NP)

Part No.: 8-967-995-02

• For video frequency adjustment (WR5-6N)

Part No.: 8-967-995-12

• For operation check

For SP (WR5-5NSP)

Part No.: 8-967-995-42

or (WR5-4NSP)

Part No.: 8-967-995-41

For LP (WR5-4NL)

Part No.: 8-967-995-51

• For AFM stereo operation check (WR5-9NS)

Part No.: 8-967-995-23

12) Adjustment remote control (J-6082-053-B)

#### 10-1-2. Equipment Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown is the following diagram.

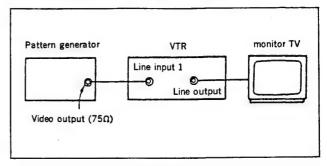


Fig. 10-1.

Make adjustment with the switches set to the following positions:

INPUT SELECT....LINE

#### 10-1-3. Input Signal Check

In this adjustment, NTSC pattern generator is connected with LINE 1 input signal terminal. When check to tuner, cornected VHF antenna terminal. Check that the amplitudes of video signal SYNC signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3V, respectively, and that the level ratio of the burst signal and "red" signal are 0.30: 0.66. Fig. 10-2. shows video signals (color bars) used in adjusting the video section.

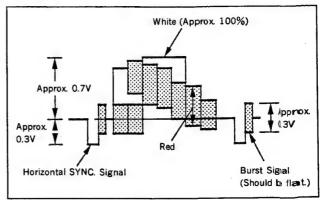


Fig. 10-2.

### 10-1-4. Alignment Tapes

The following alignment tapes are available.

The tape specified in the signal column for the adjustment to be performed should be used.

Note that if no tape code is specificed for the adjustments in which alignment tapes for operation check are used, any tape for operation check may be used.

Alignment	Tape	Contents	of Record	Applications
Tape	Speed	Video Area	PCM Area	1: -tmont
Tracking WR5-1NP (8-967-995-02)	SP	CH2: 1MHz tape pass adjustment signal Switching position adjustment marker (CH1: 9MHz)		Tape pass adjustment Switching position adjustment
Video frequency characteristic WR5-6N (8-967-995-12)	SP	RF sweep 0 to 10MHz Marker 1, 3.58, 5.5 and 7MHz		Frequency characteristic
Operation check WR5-4NSP (8-967-995-41) or WR5-5NSP (8-967-995-42)	SP	<ul> <li>Video signal Color bar 4 min. Monoscope 4 min.</li> <li>Audio signal (AFM) 400Hz 60% modulated</li> </ul>	Audio signal (PCM)     Monoscope portion     20Hz 20sec.     400Hz20sec.     14kHz20sec.     Color bar portion     1kHz 4min.	Operation check
WR5-4NL (8-967-995-51)	LP	<ul> <li>Video signal</li> <li>Color bar 4 min.</li> <li>Monoscope 4 min.</li> <li>Audio signal (AFM)</li> <li>400Hz 60% modulated</li> </ul>		
AFM stereo operation check WR5-9NS (8-967-995-23)	SP	● Video signal Color bar 4 min. Monoscope 4 min. ● Audio signal (AFM) Stereo portion (color bar) Lch: 400Hz Rch: 1kHz (L+R 1.5MHz±60kHz DEV) (L—R 1.5MHz±30kHz DEV) Bilingual portion (monoscope) MAIN: 400Hz (1.5MHz±60kHz DEV) SUB: 1kHz (1.7MHz±30kHz DEV)	• Audio signal (PCM) 400Hz 8 min.	AFM stereo operation check

The color bar signal recorded on these alignment tapes are shown in Fig. 10-3.

**Note:** This waveform is measured at the VIDEO OUT terminal (terminated at  $75\Omega$ ).

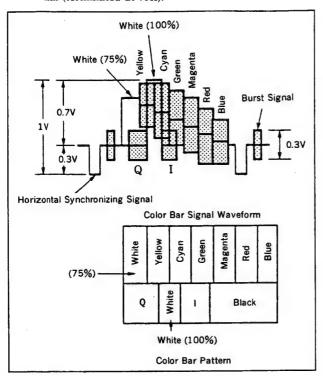


Fig. 10-3. Color Bar Signal of Alignment Tape

#### 10-1-5. Input/Output Levels and Impedance

Video input LINE IN VIDEO (phono jack) (1 each)

Input signal: 1Vp-p, 75 ohms, unbalanced,

sync negative

Video output LINE OUT VIDEO (phono jack) (1 each)

Output signal: 1Vp-p, 75ohms, unbalanced,

sync negative

Audio input LINE IN AUDIO (phono jack) (1 each)

Input level: -7.5 dBs

Input impedance: more than 47 kilohms

Audio output LINE OUT AUDIO (phono jack) (1 each)

Standard impedance: -7.5 dBs at load impedance

47 kilohms

Output impedance: less than 10 kilohms

CONTROL S IN Minijack

CONTROL L & Stereo mini-mini jack

# 10-2. POWER SUPPLY CHECK 10-2-1. Output Voltage Check (POWER SUPPLY BOARD)

(10)	TER SUPPLI BUARD)
Mode	E-E
Measurement instrument	Digital voltmeter
UN 10.5V che	ck
Measurement point	CN001 pin ®
Specified value	10.5 ± 0.1Vdc
UN 5.7V chec	k ' '
Measurement point	CN001 pin ⑤
Specified value	5.7±0.1Vdc
SW 5V check	
Measurement point	CN001 pin ④
Specified value	$5.10 \pm 0.05 \text{Vdc}$
UN -5V che	ck
Measurement point	CN001 pin ①
Specified value	$-5.0\pm0.1\text{Vdc}$

#### [Check Method]

Each of these supply voltages must meet its specified value

# 10-3. SYSTEM CONTROL SYSTEM CHECK 10-3-1. Timer Clock Check (LC-38 Board)

Mode	E-E
Signal	Arbitrary
Measurement point	IC101 pin ④
Measuring instrument	Frequency counter
Specified value	10000±100kHz

**Note:** A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

## [Check Method]

1) Check to  $10000\pm100 kHz$ .

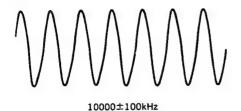


Fig. 10-4.

## 10-4. SERVO SYSTEM ADJUSTMENTS

## [Adjustment sequence]

- 1. PWM Frequency Adjustment
- 2. Switching Position Adjustment
- 3. SLOW Adjustment

## 10-4-1. PWM Frequency Adjustment (SS-144 Board)

Mode	Record
Signal	Arbitrary
Measurement point	IC005 pin ⑦
Measuring instrument	Frequency counter
Adjustment element	RV102
Specified value	$476.5 \pm 5.0 \text{kHz}$

#### [Adjustment Method]

- 1) Set Recording Time to SP mode.
- 2) Use RV005 to adjust to  $476.5 \pm 5.0 \mathrm{kHz}$ .
- 3) Set Recording Time to LP mode.
- 4) Check for at 476.5 ± 5.0 kHz.
- 5) If the specification is not met, repeat Steps 1) to 4).

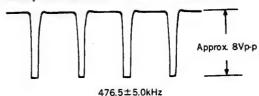


Fig. 10-5.

## 10-4-2. Switching Position Adjustment (LC-38 Board)

Mode	Playback
Signal	Alignment tape: For operation check (WR5-1NP)
Measurement point	CH-1: RP-134 board CN003 pin 4 (RF SWP) CH-2: RP-134 board CN003 pin 3 (PB RF)
Measuring instrument	Oscilloscope
Adjustment page	0
Adjustment address	03 (Switching Position Data (LOW)) 04 (Switching Position Data (HIGH))
Adjustment element	RV001 RV002
Specified value	$t=0\pm 5\mu sec$

#### [Adjustment Method]

- Place the adjustment remote control RM-95 (J-6082-053-B) in the HOLD ON position.
- 2) Use EDIT+/- button to select adjustment page 1.
- 3) Use FF/REW button to select adjustment address  $\Xi \Box$ .
- 4) Use PB/STOP button to set to adjustment data CS.
- 5) Press PAUSE button on the remote control to store the adjustment data.
- 6) Use EDIT+/— button to select adjustment page  $\Box$ .
- 7) Use FF/REW button to select adjustment address  $C^{-1}$ .
- 8) Use RV001 to adjust to  $t=0\pm255\mu$ sec.
- 9) Use FF/REW button to select adjustment address  $\vec{\Box}\vec{\Box}$ .
- 10) Use RV002 to adjust to  $t=0\pm 5\mu sec.$
- 11) Use EDIT+/-button to select adjustment page
- 12) Use FF/REW button to select adjustment address  $\Xi$   $\Xi$ .
- 13) Use PB/STOP button to set to adjustment data [1].
- 14) Press PAUSE button on the remote control to store the adjustment data.

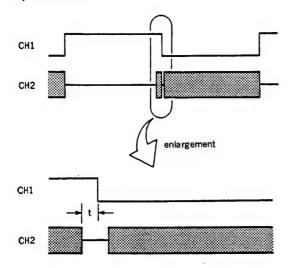


Fig. 10-6.

#### 10-5. VIDEO SYSTEM ADJUSTMENTS

Color video signal supplied from a pattern generator is used as a video input signal for Video System Alignment in the Recording mode. This signal should be checked to ensure that it meets the specifications provided in Fig. 10-2 and "INPUT SIGNAL CHECK".

The adjustments in Video System Alignment should be performed in the following sequence.

#### [Adjustment sequence]

- MIDDLE TUNE Adjustment
- 2. EE Level Adjustment
- 3. IR Adjustment
- 4. Y/Chroma Separation Adjustment
- 5. Emphasis Y Level Adjustment
- 6. AC Clip Check
- 7. Y FM Carrier, Y FM Deviation Adjustment
- 8. Recording Y Level Adjustment
- 9. Chroma Emphasis Adjustment
- 10. Recording Chroma Level Adjustment
- 11. Playback Y Level Adjustment
- 12. De-emphasis Y Level Check
- 13. CCD Direct Level Adjustment

## 10-5-1. MIDDLE TUNE Adjustment (RP-134 Board)

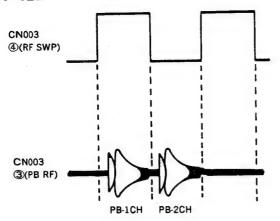
(1) 1ch,2ch

Note: The designation ( ) stands for adjustment on CH-2.

tote. The designation ( ) country		
Mode	Playback	
Signal	Alignment tape: for frequency characteristic adjustment (WR5-6N)	
Measurement point	CN003 pin ③ (PB RF) External trigger: CN003 pin ④ (RF SWP) Trigger slope:—[+]	
Measuring instrument	Oscilloscope	
Adjustment element	RV002 (RV001)	
Specified value	3.58MHz level: 5.5MHz level = $4:3\pm1$	

#### [Adjustment Method]

1) Use RV002 [RV001] to adjust so that the ratio of 3.58MHz level to 5.5MHz of PB RF output waveform is  $4:3\pm1.$ 



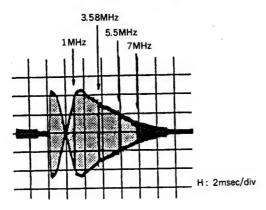


Fig. 10-7.

#### (2) 1'ch

Mode	Playback
Signal	Alignment tape: for frequency characteristic adjustment (WR5-6N)
Measurement point	CN003 pin ① (1'CH RF) External trigger: CN003 pin ④ (RF SWP)
Measuring instrument	Oscilloscope
Adjustment page	D .
Adjustment address	02 (Test Mode (COSMO))
Adjustment element	RV003
Specified value	3.58MHz level: 5.5MHz level=4:3 $\pm$ 1

### [Adjustment Method]

- 1) Place the adjustment remote control in the HOLD ON
- 2) Use EDIT+/- button to select adjustment page  $\Box$
- 3) Use FF/REW button to select adjustment address  $\vec{U}\vec{z}'$ .
- 4) Use PB/STOP button to select adjustment data  $\vec{G}\vec{c}$ .
- Press PAUSE button on the remote control to store the adjustment data.
- 6) Use RV003 to adjust so that the ratio of 3.58MHz level to 5.5MHz of PB RF output waveform is 4:3 $\pm$ 1.
- 7) Use EDIT+/- button to select adjustment page G
- 8) Use FF/REW button to select adjustment address  $\widehat{U}_{-}^{-1}$ .
- Use FF/REW button to select adjustment address  $\ensuremath{\mbox{D}}\xspace$  .
- 10) Press PAUSE button on the remote control to store the adjustment data.
- 11) Place the adjustment remote control in the HOLD  $0\mathbf{FF}$ position.

## 10-5-2. EE Level Adjustment (VI-111 Board)

Mode	Record
Signal	Color bar
Measurement point	CN511 pin ① (LINE OUT V)
Measuring instrument	Oscilloscope
Adjustment element	RV106
Specified value	1.00±0.05Vp-p

## [Adjustment Method]

1) Use RV106 to adjust to  $1.00 \pm 0.05$ Vp-p.

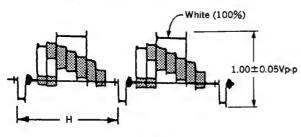


Fig. 10-8.

## 10-5-3. IR Adjustment (VI-111 Board)

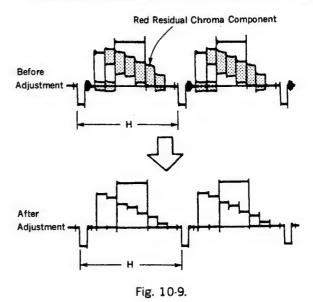
Mode	Record
Signal	Color bar
Measurement point	IC101 pin ⑦ (Y COMB OUT)
Measuring instrument	Oscilloscope
Adjustment element	RV103
Specified value	Red residual chroma component should be minimized (to 60mVp-p or less).

### [Connection]

1) Connect between pin  $\P$  (SWP) and pin  $\P$  (V REF) of IC101.

### [Adjustment Method]

 Use RV103 to adjust so that the red residual chroma component is minimized (to a level of 60mVp-p or less).



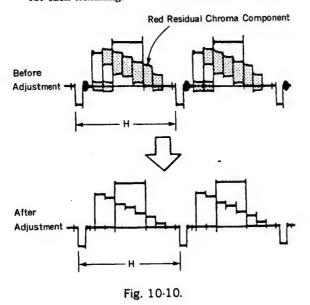
## 10-5-4. Y/Chroma Separation Adjustment (VI-111 Board)

Mode	E-E
Signal	Color bar (VIDEO)
Measurement point	IC101 pin (I) (C+CD)
Measuring instrument	Oscilloscope
Adjustment element	RV111 (PHASE) RV105 (GAIN)
Specified value	Red residual chroma component should be minimized (to 30mVp-p or less).

## [Adjustment Method]

 Adjust RV111 and RV105 alternately to minimize the red residual chroma component (to a level of 30mVp-p or less).

Note: The adjustment should be performed in the sequence of RV105 to RV111 to RV105 to RV111 two or more times for each trimming.

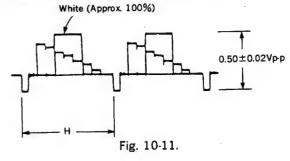


10-5-5. Emphasis Y Level Adjustment (VI-111 Board)

Mode	Record
Signal	Color bar
Measurement point	IC101 pin ③ (EMPH Y)
Measuring instrument	Oscilloscope
Adjustment element	RV109
Specified value	$0.50 \pm 0.02 \text{Vp-p}$

## [Adjustment Method]

1) Use RV109 and adjust to  $0.50\pm0.02$ Vp-p.



### 10-5-6. AC Clip Check (VI-111 Board)

Mode	Record
Signal	Color bar
Measurement point	IC101 pin 🕄 (DEV)
Measuring instrument	Oscilloscope
Specified value	White Clip: $\frac{B}{A} \times 100 = 235 \pm 10\%$
	Dark Clip: $\frac{C}{A} \times 100 = 95 \pm 10\%$

Note: To measure with the oscilloscope, effect the band limit of 20MHz.

### [Check Method]

1) Check that the output waveform at IC101 pin  $\mathfrak B$  is  $\frac{B}{A} \times 100 = 235 \pm 10\%$ . Also check that the output waveform at IC101 pin  $\mathfrak D$  is  $\frac{C}{A} \times 100 = 95 \pm 10\%$ .

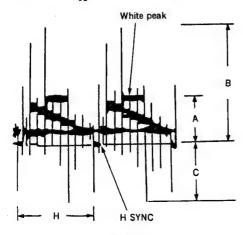


Fig. 10-12.

### 10-5-7. Y FM Carrier Frequency, Y FM Deviation Adjustment

(1) Y FM Carrier Frequency Adjustment (VI-111 Board)

Mode	Record
Signal	No signal
Measurement point	CN502 pin (REC Y RF)
Measuring instrument	Frequency counter Oscilloscope
Adjustment element	RV108
Specified value	$4.37 \pm 0.02 \text{MHz}$

**Note:** A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

### [Adjustment Method]

1) Use RV108 to adjust to  $4.37 \pm 0.02$ MHz.



Fig. 10-13.

### (2) Y FM Deviation Adjustment (VI-111 Board)

Mode	Record and playback
Signal	Color bar
Measurement point	LINE VIDEO OUT terminal
Measuring instrument	Oscilloscope
Adjustment element	RV107
Specified value	Playback level should be at $1.00 \pm 0.05 \text{Vp-p}$ .

#### [Adjustment Method]

- 1) Record color bar signal.
- Play back the recorded signal.
- 3) Check the playback output level. Specification: 1.00±0.05Vp-p
- 4) If the specification is not met, rotate RV107 as directed below and then repeat Steps 1) to 4).

	Direction of Rotating RV107	
Over specified value	Counterclockwise ( ( )	
Below specified value	Clockwise ( )	

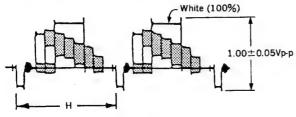


Fig. 10-14.

## 10-5-8. Recording Y Level Adjustment (VI-111 Board)

Mode	Record
Signal	No signal
Measurement point	CN502 pin ( (REC Y RF)
Measuring instrument	Oscilloscope
Adjustment element	RV102
Specified value	260±10mVp-p

#### [Adjustment Method]

- 1) Record.
- 2) Use RV102 to adjust to  $260\pm10$ mVp-p.

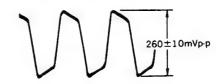


Fig. 10-15.

## 10-5-9. Chroma Emphasis Adjustment (VI-111 Board)

Mode	Record
Signal	Color bar
Measurement point	IC103 pin @ (B.EMPH 0)
Measuring instrument	Oscilloscope
Adjustment element	FL105
Specified value	fo component should be reduced to a min imum.

#### [Adjustment Method]

 Adjust FL105 to allow the latter half of the yell ow component in the chroma signal to have a minimum amplitude.

Allow the latter half of the yellow component to have a minimum amplitude.

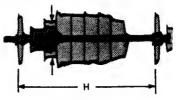


Fig. 10-16.

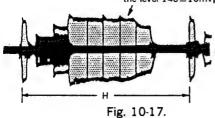
# 10-5-10. Recording Chroma Level Adjustment (VI-111 Board)

(1, 222 Dodie)							
Mode	Record						
Signal	Color bar						
Measurement point	CN502 pin @ (REC C RF)						
Measuring instrument	Oscilloscope						
Adjustment element	RV112						
Specified value	140±10mVp-p						

# [Adjustment Method]

1) Adjust RV112 so that the flat portion of the chroma signal RED component has the level  $140\pm10$ mVp-p.

Adjustment so that the portion of the chroma signal RED component has the level 140±10mVp-p.



# 10-5-11. Playback Y Level Adjustment (VI-111 Board)

Mode	Playback
Signal	Alignment tape: For operation check, color bar portion (WR5-5NSP)
Measurement point	IC511 pin ①
Measuring instrument	Oscilloscope
Adjustment element	RV101
Specified value	1.00±0.05Vp-p

# [Adjustment Method]

1) Use RV101 to adjust to  $1.00\pm0.05$ Vp-p.

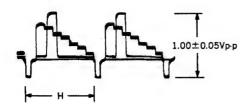


Fig. 10-18.

# 10-5-12. De-emphasis Y Level Check (VI-111 Board)

Mode	Playback
Signal	Alignment tape: For operation check, color bar portion (WR5-5NSP)
Measurement point	IC101 pin ② (DL IN 1)
Measuring instrument	Oscilloscope
Specified value	0.5±0.1Vp-p

### [Check Method]

1) Check to  $0.5\pm0.1$ Vp-p.

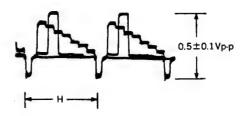


Fig. 10-19.

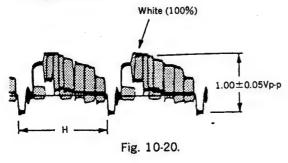
10-5-13. CCD Direct Level Adjustment (NJ-4 Board)

(14:	J-4 Board)
Mode	Playback Pause (SP mode)
Signal	Alignment tape: For operation check, (WR5-5NSP) Color bar portion
Measurement point	LINE VIDEO OUT terminal
Measuring instrument	Oscilloscope
Adjustment element	RV801
Specified value	The level differene between playback and pause modes must be $0\pm0.05\mathrm{Vp}$ -p.

Note: The LINE VIDEO OUT terminal (RJ-35 board J501) should be terminated at 75 ohms.

#### [Adjustment Method]

- 1) Confirm that the video signal level is at  $1.00 \pm 0.05 \text{Vp-p}$  in playback mode.
- 2) Enter the playback pause mode.
- Adjust RV801 so that the video signal level is equal to during playback.



# 10-6. AUDIO SYSTEM ADJUSTMENTS

Color bar signal should be used as Video signal input for performing this adjustment.

# [Connection of Equipment for Audio Measurement]

In addition to equipment for video measurement, equipment for audio system measurement should be connected as illustrated below.

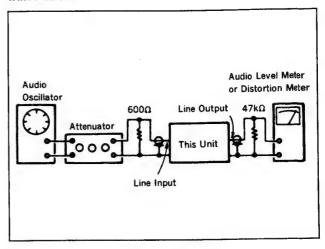


Fig. 10-21.

Unless otherwise specified, place the switches and controls of this unit in the following positions:

#### [Adjustment sequence]

- 1. Carrier Frequency Adjustment
- 2. Playback Level Check
- 3. Overall Level Check
- 4. Overall Distortion Factor Check
- 5. Overall Noise Level Check
- 6. Overall Frequency Characteristic Check

# 10-6-1. Carrier Frequency Adjustment (AU-127 Board)

(···								
Mode	Record							
Signal	No signal							
Measurement point	CN902 pin ① (REC AFM)							
Measuring instrument	Frequency counter							
Adjustment element	RV901							
Specified value	1500±3kHz							

**Note:** A frequency counter should be connected through a buffer amplifier (oscilloscope, etc.) having a high impedance and a low capacitance.

### [Adjustment Method]

1) Use RV901 to adjust to  $1500 \pm 3 \text{kHz}$ .

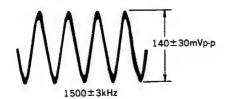


Fig. 10-22.

### 10-6-2. Playback Level Check (AU-127 Board)

Mode	Playback
Signal	Alignment tape: For operation check, 400Hz portion (WR5-9NS)
Measurement point	LINE AUDIO OUT terminal
Measuring instrument	Audio level meter
Specified value	-7.5±2.0dBs

# [Adjustment Method]

1) Check level is at  $-7.5 \pm 2.0$ dBs.

#### 10-6-3. Overall Level Check

Mode	Record (SP/LP mode)
Signal	400Hz, -7.5dBs
Measurement point	LINE AUDIO OUT terminal
Measuring instrument	Audio level meter
Specified value	-7.5±3dBs

### [Check Method]

- 1) Record to SP mode.
- 2) Check level is at  $-7.5 \pm 3$ dBs.
- 3) Record to LP mode.
- 4) Check level is at  $-7.5\pm3$ dBs.

#### 10-6-4. Overall Distortion Factor Check

Mode	Self-record playback (SP/LP mode)
Signal	400Hz, -7.5dBs
Measurement point	LINE AUDIO OUT terminal
Measuring instrument	Distortion meter
Specified value	0.25% or less

#### [Check Method]

- 1) Record signal to SP/LP mode.
- 2) Play back the recorded portion.
- 3) Check that the distortion factor is 0.25% or less.

### 10-6-5. Overall Noise Level Check

Mode	Self-record playback (LP mode)							
Signal	No signal (Insert a shorting plug into the Audio Line Input jack.)							
Measurement point	LINE AUDIO OUT terminal							
Measuring instrument	Audio level meter							
Specified value	-60dBs or less Note)							

#### [Check Method]

- 1) Record.
- 2) Play back recorded portion.
- 3) Check that the noise level is -60dBs or less.

Note: This is a value when an IHF-A weighing filteris used.

# 10-6-6. Overall Frequency Characteristic Check

Mode	Self-record playback
Signal	<ul> <li>♠ 400Hz, -7.5dBs</li> <li>働 20Hz, -7.5dBs</li> <li>© 14kHz, -7.5dBs</li> <li>: Audio Line Input terminal</li> </ul>
Measurement point	LINE AUDIO OUT terminal
Measuring instrument	Audio level meter
Specified value	The playback output levels of $20 \mathrm{Hz}$ and $14 \mathrm{kHz}$ should be $0 \pm 3 \mathrm{dBs}$ with $400 \mathrm{Hz}$ playback output level at $0 \mathrm{dBs}$ .

# [Check Method]

- 1) Record signals (A) to (C) in turn.
- 2) Play back the recorded portion.
- 3) Check that the respective playback output levels of 20 Hz and 14kHz are  $0\pm3dBs$  with 400Hz playback output level at 0dBs.

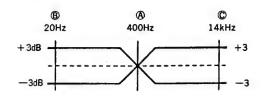
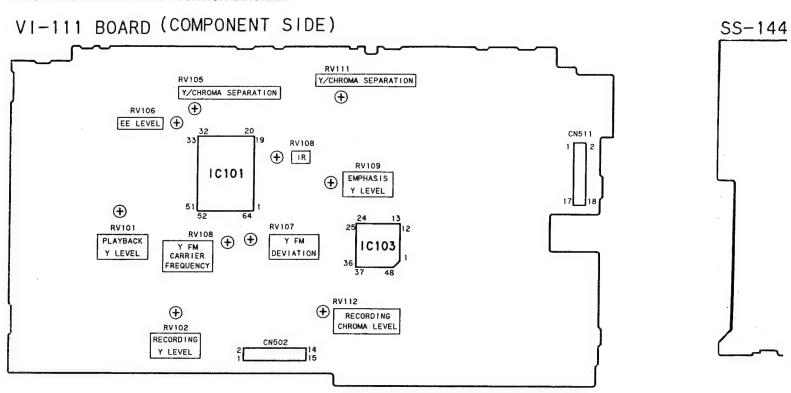
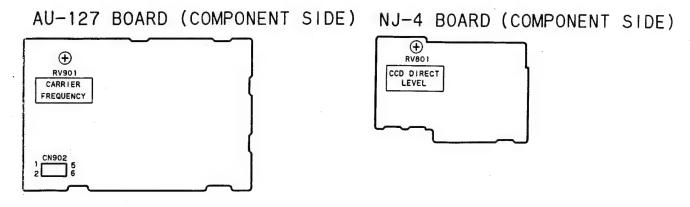
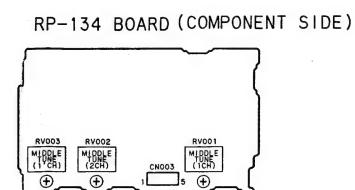


Fig. 10-23,

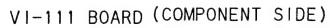
# 10-8. ADJUSTING PARTS LOCATION DIAGRAM

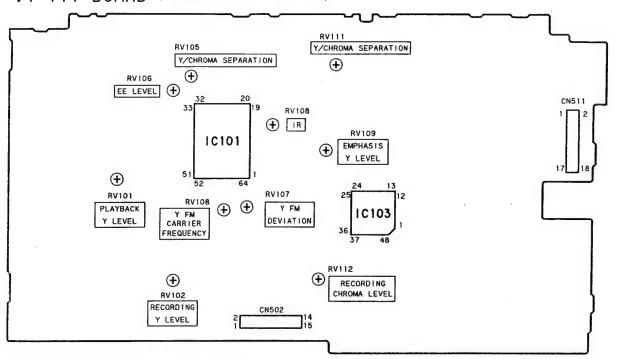


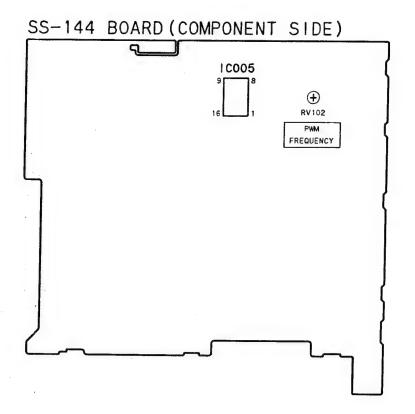




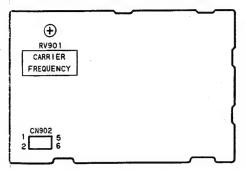
# 10-8. ADJUSTING PARTS LOCATION DIAGRAM

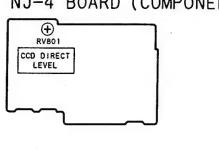


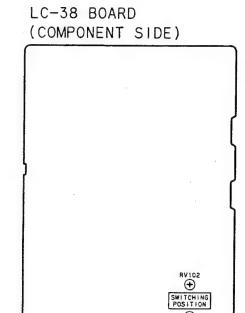




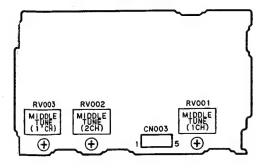
AU-127 BOARD (COMPONENT SIDE) NJ-4 BOARD (COMPONENT SIDE)







RP-134 BOARD (COMPONENT SIDE)



Sony Corporation Home Video Group 

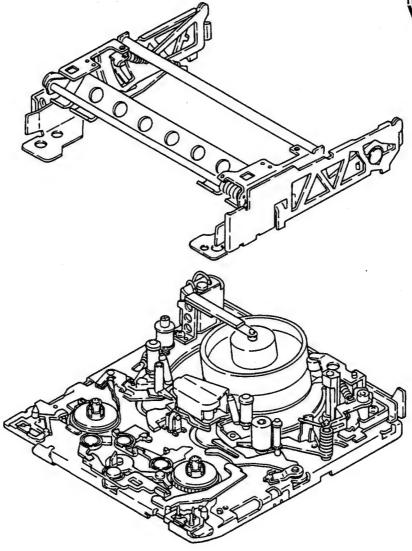
# 8mm Video MECHANICAL ADJUSTMENT MANUAL III

# **U MECHANISM**

Please use in conjunction with the SERVICE MANUAL

Video 8





8 MECHANISM DECK SONY®

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# 1. PREPARATIONS FOR MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

**Note:** For removal of the cabinet, the boards, the cassette compartment, etc., refer to the service guides.

# 1-1. OPERATION WITHOUT CASSETTE COMPARTMENT ASSEMBLY AND TAPE

Note: The unit will not work if exposed to a strong light.

# 1-1-1. How to Trigger the Loading Operation (See Fig. 1-1.)

- Supply power to the unit after removing the cabinet, the camera block, the cassette compartment assembly, etc., as indicated in the service guides. (This will enable operation of the mechanical deck.)
- 2) Cover the LED assembly with an opaque cap, etc. 1.
- 3) Attach a piece of tape to the RECOG switch ② so that the pin is held down.
- 4) Push the EJECT lever 3 in the direction of the arrow 3.

# 1-1-2. Setting the Playback Mode (See Fig. 1-1.)

- 1) Follow the procedures in section 1-1-1. above.
- 2) Put the rubber band 4 around the S and T reels.
- 3) Press the PLAY switch of unit, then push the tension regulator arm assembly 3 in the direction of the arrow 3 when the T reel starts to rotate (the tension regulator band will be released, and the S reel will start rotating).
- 4) To stop operation, press the STOP switch.

# 1-1-3. Eject Operation (See Fig. 1-1.)

1) To eject, turn the EJECT switch on.

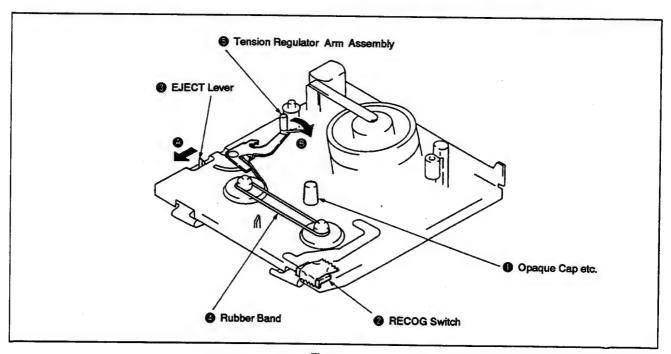


Fig. 1-1.

#### 1-2. THE MODE SELECTOR

# 1-2-1. Name of Each Part (external) (See Fig. 1-2.)

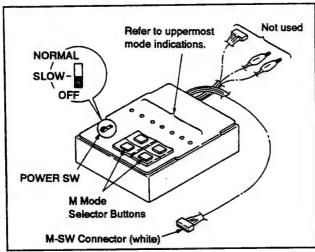


Fig. 1-2

#### 1-2-2. Connections (See Fig. 1-3.)

- 1) Mount the MODE SELECTOR III panel (Ref. No. J-9) onto the mode selector.
- 2) Attach the conversion connector (Ref. No. J-8) 3 of MODE SELECTOR III to the 6-pin connector (white) 9 of the mode selector M-SW.
- 3) Remove the FP-89 flexible board 5 from the flexible connector 6.
- 4) Attach the FP-89 flexible board § to the flexible connector § of the MODE SELECTOR III conversion connector §, then attach the 2-pin connector (white) § of the loading motor to the 2-pin connector (white) §.

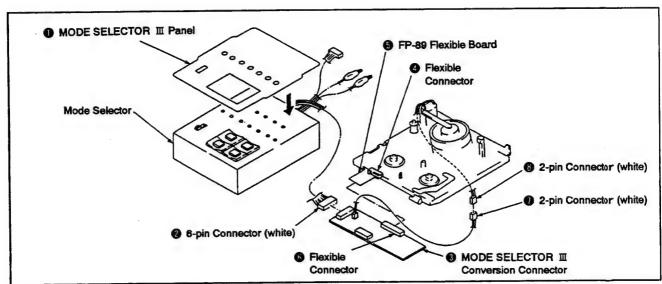


Fig. 1-3.

#### 1-2-3. Handling (See Figs. 1-2. and 1-4.)

- Use only the M mode selector buttons.
- Refer to mode indications on the uppermost part of the MODE SELECTOR III panel.
- If the right M mode selector button is kept pressed, the lit indication will change in the order of EJECT → (IA) → ULD → (IB) → STOP → (IC) → FWD.
- To change modes in the reverse direction (from FWD to EJECT), press the left selector button.

Note: For this U mechanism, the uppermost indicators on the MODE SELECTOR III panel are used. The IA, IB and IC indications light up during mode changes.

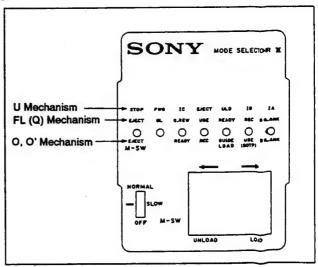


Fig. 1-4.

# 2. PERIODICAL CHECK AND MAINTENANCE (See Fig. 2-1.)

The following periodical check and maintenance procedures are necessary to ensure proper operation and to protect the tapes as well as the unit, and the following maintenance procedures must be always carried out after repairing regardless of how long the unit has been used.

#### 2-1. ROTARY DRUM ASSEMBLY CLEANING

While pressing a piece of chamois leather (Ref. No. J-2)
moistened in cleaning fluid (Ref. No. J-1) lightly against the
rotary drum, turn the rotary upper drum slowly counterclockwise with your fingers.

Note: Do not drive the drum with the motor, and do not turn it clockwise.

Do not move the chamois leather vertically against the head tip; this can damage the head tip. Strictly follow the cleaning instructions above.

# 2-2. TAPE PATH CLEANING

 Set the cassette compartment assembly to the eject state, or remove it. Then clean the tape path (guides No. 1 to 7, capstan shaft, pinch rollers) with a piece of charnois leather moistened in cleaning fluid (See Fig. 2-1).

### 2-3. DRIVE SYSTEM CLEANING

1) Clean the drive system (timing belt, reel table surface) with a piece of cloth moistened in cleaning fluid.

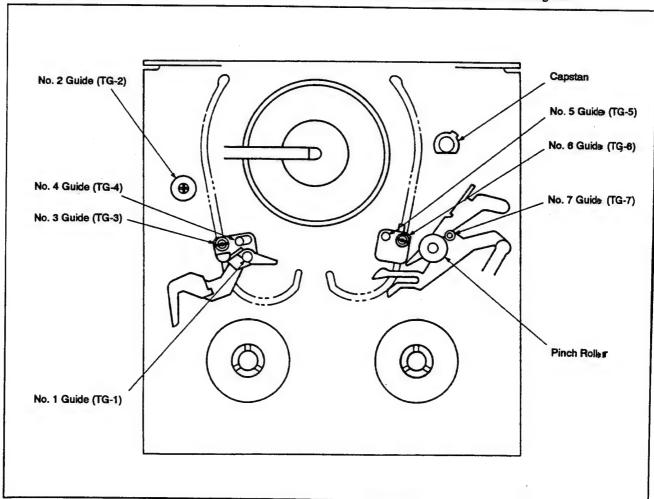


Fig. 2-1.

# 2-4. PERIODICAL CHECK ITEMS

OCleaning 

© Lubrication 

☆ Check

Maintenance and Check Item		Operation time (H)									Check		
		500					4,500 5.000		Remarks				
Cleaning	Tape path surfaces Cleaning	0	0	0	0	0	0	0	0	0	0	Do not oil.	
Demag- netizing	Rotary drum assembly cleaning and demagnetizing	0	0	0	0	0	0	0	0	0	0	Do not oil.	
	Relay belt (short)	-	☆	-	☆	_	*	_	☆	_	*	3-728-866-01	
	Relay belt (long)	-	☆	-	☆	-	*	_	☆		*	3-728-865-01	
Drive System	Capstan shaft	_	0	-	0	-	0	-	0	_	о О	Take care that no oil	
	Idler pulley axle	-	0	-	0	-	0	-	0	-	0	gets on tape path surfaces.	
	Loading motor	-	☆	_	*	_	*	_	☆				
	Abnormal noise	*	☆	*	*	*	*	*	쇼			1-541-612-11	
Perfor-	Back tension measurement	-	☆	-	☆	-	*	_ H	☆	☆ -	<ul><li>☆</li><li>☆</li></ul>		
mance Check	Brake system	-	*	-	*	_	*	_	_		_		
	FWD, RVS torque measurement	-	*	-	*	-	*	-	<ul><li>☆</li><li>☆</li></ul>	-	<ul><li>☆</li><li>☆</li></ul>		

**Notes:** When overhauling the unit, perform parts replacement referring to the table above.

Regarding Oil:

- Always use the specified oil (using oil of different viscosity, etc. can cause troubles of several kinds).
   Specified oil: Part No. 7-661-018-01 (Mitsubishi Diamond Oil Hydrofluid EP56)
- Be sure that no dirt is mixed in the oil to be used on axle bearings. Use of dirty oil can result in bearing wear and burning.
- By "one drop of oil" is meant the quantity of oil adhering to the end of a 2mm-diameter rod as shown in Fig. 2-2.

On grease:

Use the specified grease.
 Grease: Part No. 7-662-010-08
 (Sony grease SGL-701)

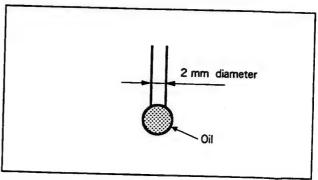


Fig. 2-2.

# 2-5. SERVICING TOOLS

Ref. No.	Name	Part Code	Marking	Application, etc.
J-1	Cleaning fluid	Y-2031-001-0	_	
J-2	Chamois cloth	2-034-697-00	_	
J-3	Head demagnetizer	Commercially available	_	
J-4	Dental mirror Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape NTSC (WR5-1N) PAL (WR5-1C)	8-967-995-01 8-967-995-06		Tape path
J-6	FWD/RVS takeup torque cassette	J-6080-824-A	GD-2086	
J-7	Rotary drum jig	(Attached to the maintenance rotary upper drum)		
J-8	Mode selector III conversion connector	J-6082-021-A		General
J-9	Mode selector III panel	J-6082-023-A		General
J-10	Mode selector	J-6080-825-A		General
J-11	Hexagonal wrench detection (0.89 mm) or L wrench (0.89 mm)	7-700-766-01 7-700-736-06		Tape path
J-12	Sony grease (SGL-701)	7-662-010-08		

Other devices: Oscilloscope Analog tester (20  $k\Omega$  )

J-1	J-2	J-3	J-4
J-5	J-6	J-7	J-8
		(Attached to the maintenance rotary upper drum)	
1-9	J-10	J-11	J-12
•••••			

# 3. MECHANICAL BLOCK CHECK, ADJUSTMENT AND REPLACEMENT

Notes: • Use the mode selector (Ref. No. J-10) for procedures in this chapter.

 Modes within a frame are those set by pressing the buttons of the mode selector.

# 3-1. HC ROLLER ASSEMBLY

#### 1. Removal (See Fig. 3-1.)

Remove the screw , then remove the HC roller assembly

### 2. Installation (See Fig. 3-1.)

1) Align the two dowels 3 attached to the HC roller assembly 2 with the two holes 4 in the mechanism chassis.

2) Secure the HC roller assembly 2 with the screw 1.

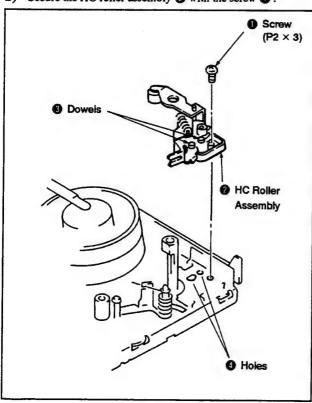


Fig. 3-1.

# 3-2. GUIDE GUARD ASSEMBLY

# 1. Removal (See Fig. 3-2.)

Remove the screw 1, then remove the guide guard assembly 2.

### 2. Installation (See Fig. 3-2.)

- 1) Align the dowel 3 attached to the guide guard assembly 2 with the hole 4.
- 2) Secure the guide guard assembly @ with the screw 1.

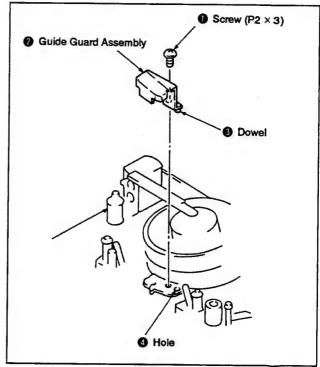


Fig. 3-2.

# 3-3. DC MOTOR (CAPSTAN MOTOR) ASSEMBLY

- 1. Removal (See Fig. 3-3.)
- 1) Set the ULD mode.
- 2) Turn the stopper 1 in the direction of the arrow (A) as far as it will go.
- 3) Remove the two screws ②, then remove the DC motor ③.
- 2. Installation (See Fig. 3-3.)
- 1) Align the two screwed dowels 4 with the two holes 5, then engage the toothed part 6 with the connecting gear 7.
- 2) Secure the DC motor assembly 3 with the two screws 2.
- 3) Turn the stopper 1 in the direction of the arrow 3 as far as it will go.
- Note: When engaging the gears, take care not to damage their teeth.
  - Do not leave any clearance between the DC motor sand the chassis.
  - Do not touch the capstan motor axle\*, the oil seal\* and the rotor\*.

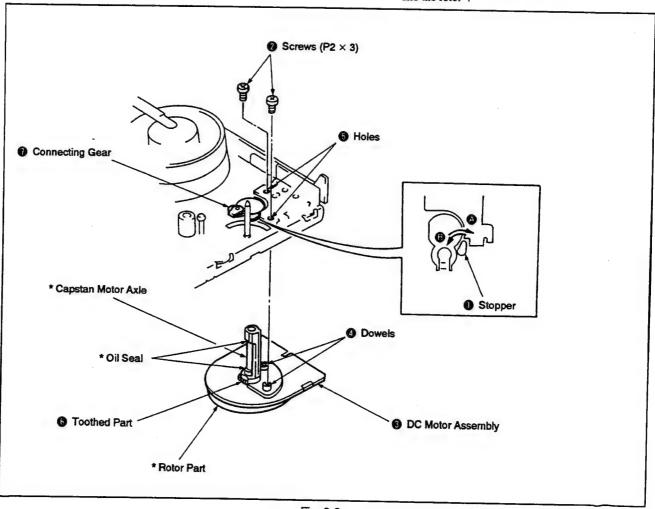


Fig. 3-3.

# 3-4. S BRAKE, T BRAKE

- 1. Removal (See Fig. 3-4.)
- 1) Remove the torsion coil spring (ST) 1.
- 2) Remove the axle holding pin **3**, then remove the T brake **3**.
- 3) Remove the axle holding pin 3, then remove the S brake 5.
- 2. Installation (See Fig. 3-4.)
- 1) While fitting the toothed part 3 into the notch 7, mount the S brake 3.
- 2) Insert the axle holding pin 4.
- 3) Insert the axle (1) to the S reel side of the brake release arm (1) so that the (2) part comes closer to the drum than part (3), and mount the T brake (3).
- 4) Insert the axle holding pin 2.
- 5) Insert the torsion coil spring (ST) below the claw of the axle , then hook it to two claws .

Note: Confirm that the claws of axle holding pins 2 and 4 are not broken before assembling.

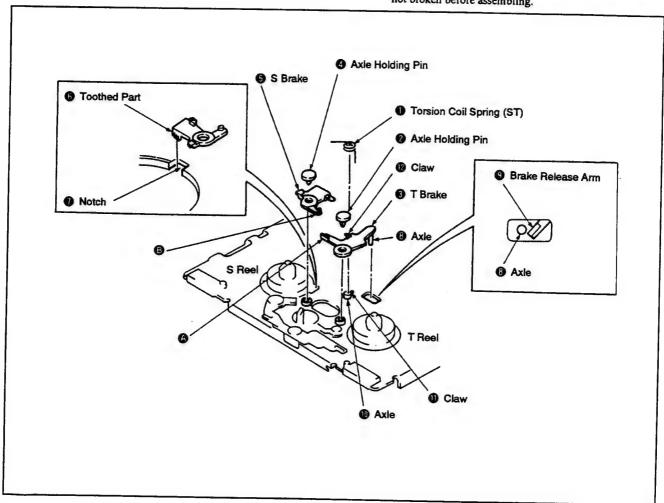


Fig. 3-4.

# 3-5. LB BRAKE, AXLE HOLDING PINS

- 1. Removal (See Fig. 3-5.)
- 1) Remove the screw 1, then remove the TL holding plate 2.
- Remove the axle holding pin 3, then remove the LB brake
   .
- Remove the axle holding pin , then remove the LB lever
   .
- 2. Installation (See Fig. 3-5.)
- 1) Mount the LB lever (3) matching it to pin (4) of the LB gear, then secure it with the axle holding pin (5).
- 2) Insert the pin (3) into the notch (3) of the LB lever (5), then mount the LB brake (4) while inserting the toothed part (10) into the notch (11).
- 3) Insert the axle holding pin 3.
- 4) Align the dowel **10** with the hole **13**, then mount the TL holding plate and secure it with the screw **1**.

Note: Confirm that the claws of axle holding pins 3 and 5 are not broken before assembling.

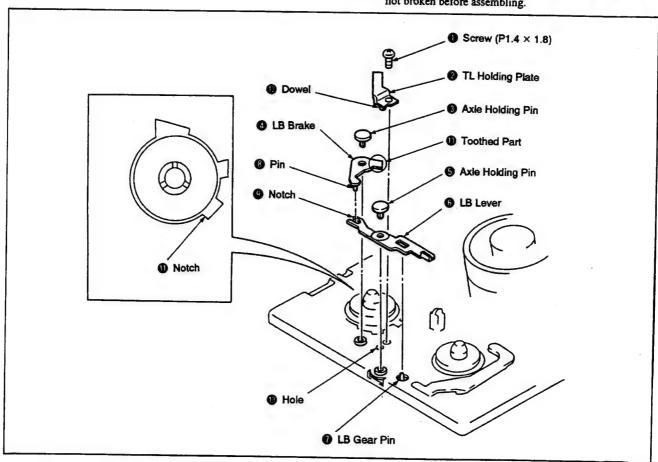


Fig. 3-5.

### 3-6. LB RELEASE ARM

# 1. Removal (See Fig. 3-6.)

1) While pushing the claw 1 in the direction of the arrow, remove the LB release arm 2.

### 2. Installation (See Fig. 3-6.)

1) Fit the LB release arm 2 to the axle 3, insert protrusions 2, 5, 6, 6 into the three holes 4, then secure with the claw 1.

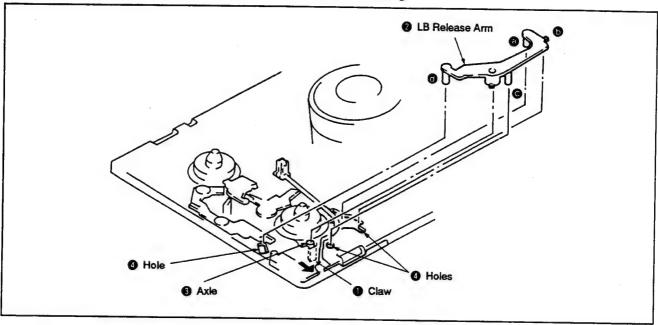


Fig. 3-6.

# 3-7. RK STOPPER, RK STOPPER ARMS

- 1. Removal (See Fig, 3-7.)
- 1) Remove the torsion coil spring (RK) 1.
- 2) Open the chassis claw 2, then remove the RK stopper arm 3.
- 3) Remove the RK stopper 4.
- 2. Installation (See Fig. 3-7.)
- 1) Mount the RK stopper 4 onto the axle 6.
- 2) Mount the RK stopper arm 3 onto the axle 6, insert Pin 10 into hole 10, then hook the claw 2 of the chassis to the hole 10.
- 3) Insert the torsion coil spring (RK) 1 into the axle 5, then hook it to claws 3 and 3.

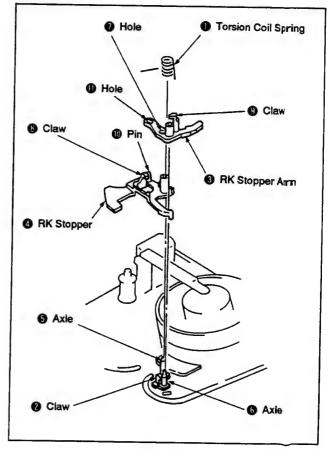


Fig. 3-7.

# 3-8. PINCH ARM ASSEMBLY, TG-7 ASSEMBLY

- 1. Removal (See Fig. 3-8.)
- 1) Set the IB mode.
- Remove the stopper washer 1 , then remove the pinch arm assembly 2 .
- 3) Bend the claw 4 inside hole 6 in the direction of the arrow using a thin screwdriver or the like, then remove the TG-7 plate spring 5.
- 4) Remove the TG-7 arm assembly 6.

- 2. Installation (See Fig. 3-8.)
- 1) Grease the inner surfaces of hole 1 (See Fig. A).
- 2) Insert the axle 3 of the TG-7 arm assembly 5 into the hole 7.
- 3) Grease the shaded section (See Fig. A).
- 4) Insert the TG-7 plate spring 5 into the hole 3, then secure it with the claw 2.
- 5) Apply half a drop of oil to the axle (9 (See Fig. B).
- 6) Fit the pinch arm assembly 2 to the axle 3 and insert the pinch roller sub arm assembly tab 10 into the 6 part.
- 7) Install the stopper washer 1.
- Note: Take care not to grease the screw 10 of the TG-7 arm assembly 13 (See Fig. A).
  - When fitting the pinch arm assembly to the axle
     , make sure that it does not touch the TG-7 guide
     or the rubber roller
  - After assembling, be sure to perform tape path adjustment as described in section 4.

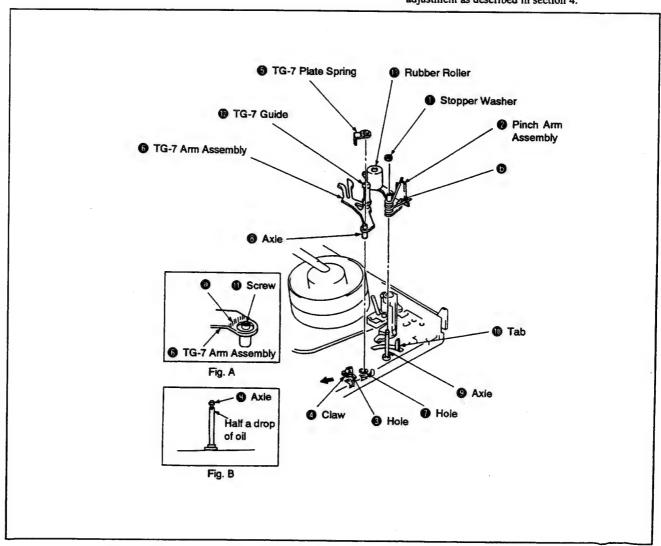


Fig. 3-8.

### 3-9. TG-2 ASSEMBLY

# 1. Removal (See Fig. 3-9.)

- 1) Remove the TG-2 upper flange assembly 1.
- 2) Remove the TG-2 roller ②, the TG-2 sleeve ③, the TG-2 lower flange ④ and the compression spring ⑤.

# 2. Installation (See Fig. 3-9.)

- 1) Mount the compression spring **5**, the TG-2 lower flange **4**, the TG-2 sleeve **3** and the TG-2 roller **2** to the axle.
- 2) Secure the TG-2 upper flange 1 to the axle by rotating it 4 to 6 turns.

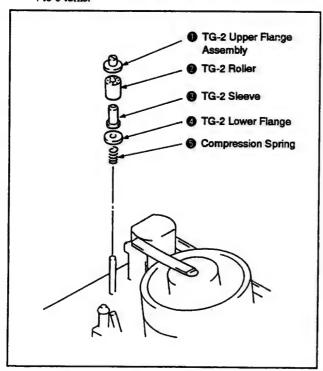


Fig. 3-9.

# 3. TG-2 Height Preset (see Fig. 3-10.)

1) Adjust height from the mechanism chassis upper surface to the TG-2 upper flange ① upper surface to 18.6 mm by turning the TG-2 upper flange ①.

**Note:** After adjustment, be sure to perform tape path adjustment as described in section 4.

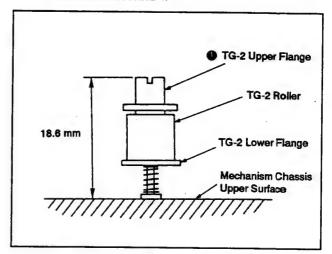


Fig. 3-10.

### 3-10. S REEL TABLE ASSEMBLY, T REEL TABLE ASSEMBLY

- 1. Removal (See Fig. 3-11.)
- 1) Remove the S brake and T brake as described in section 3-4.
- 2) Remove the TL holding plate as described in section 3-5.
- Remove the tension regulator band assembly as described in section 3-11.
- 4) Remove the S reel table assembly 1.
- Turn the stopper 2 approx. 90° in the direction of the arrow A.
- 6) While sliding the LB release arm 3 in the direction of the arrow 3, remove the T reel table assembly 4.
- 2. Installation (See Fig. 3-11.)
- 1) Apply half a drop of oil to the axle (See Fig. A).
- 2) Move the RK gear (3) in the direction of the arrow (3) and the TS brake (1) in the direction of the arrow (3), putting them out of the way.

- 3) While sliding the LB release arm 3 in the direction of the arrow 3, mount the T reel table assembly 4 onto the axle 5, then turn the stopper 2 in the direction of the arrow 3 as far as it will go.
- 4) Apply half a drop of oil to the axle 3 (See Fig. B).
- 5) Move the RK gear 3 in the direction of the arrow 3, the UL brake 3 in the direction of the arrow 3 and the LB brake 10 in the direction of the arrow 3, putting them out of the way.
- 6) Mount the S reel table 1 onto the axle 3.
- Mount the tension regulator band assembly as described in section 3-11.
- 8) Mount the TL holding plate as described in section 3-5.
- Mount the S brake and T brake assemblies as described in section 3-4.

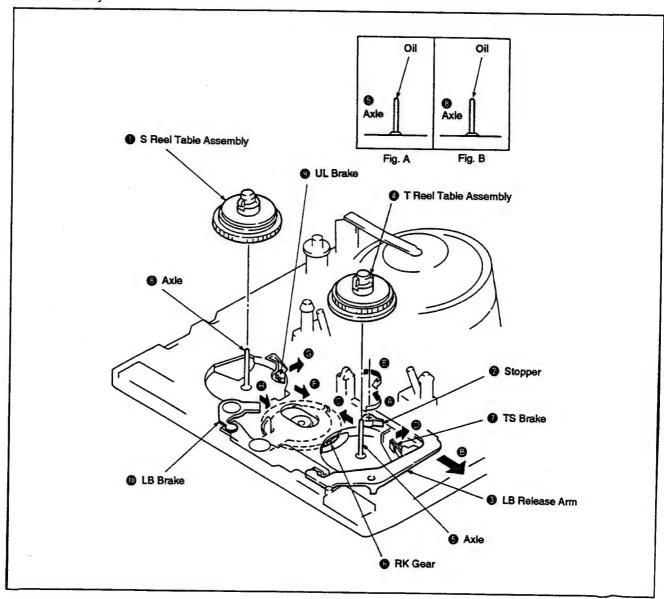


Fig. 3-11.

# 3-11. TENSION REGULATOR BAND ASSEMBLY, TENSION REGULATOR ARM ASSEMBLY

- 1. Removal (See Fig. 3-12.)
- 1) Remove the TL holding plate as described in section 3-5.
- 2) Remove the screw 1.
- 3) Using a thin screwdriver or the like, remove the tension regulator band assembly 4 from the axle 6 of tension regulator arm assembly 2.
- 4) Remove the tension spring 6.
- 5) Remove the stopper washer 6 from the back of the mechanism chassis, then remove the tension regulator arm assembly 2.
- 6) Open the claw 10, then remove the adjust arm 13.

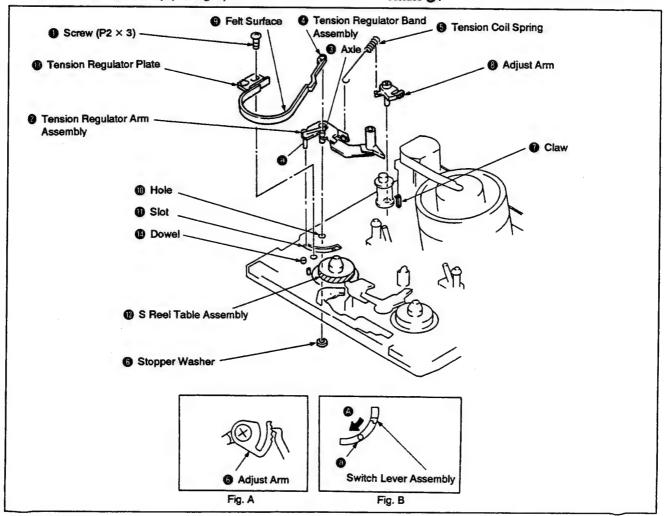
Note: When removing the tension regulator band assembly ②, take care not to twist or bend it, and not to touch the felt surface ③.

# 2. Installation (See Fig. 3-12.)

- Engage the adjust arm 3 in the position shown in Fig. A, then close the claw 1.
- 2) Apply half a drop of oil to the hole 10.
- 3) Mount the tension regulator arm assembly ②, then insert it into the slot ⑤ so that the ⑤ part comes to the arrow ⑥ side of the switch lever assembly (See Fig. B).

- 4) While holding the tension regulator arm assembly 10 from the mechanism chassis front, secure it with the stopper washer 6 from the back.
- 5) Hook the R hook of the tension spring 6 to the adjust arm 8 as shown in the figure, then hook the opposite end to the tension regulator arm assembly 2.
- 6) Mount the tension regulator band assembly 3 onto the axle 3 of tension regulator arm assembly 3, and place it so that the felt surface 9 comes against the shaded portion of the S reel table assembly 3.
- 7) Mount the tension regulator plate (3) of the tension regulator band assembly (4) so that it is aligned with the dowel (12) of the mechanism chassis, then secure it temporarily with the screw (1).
- 8) Mount the TL holding plate as described in section 3-5.
- Adjust tension regulator FWD position as described in section 3-12.
- 10) Perform adjust arm adjustment as described in section 3-22.

Note: When mounting the tension regulator band assembly **Q**, take care not to twist or bend it, and not to touch the felt surface **Q**.



# 3-12. TENSION REGULATOR FWD POSITION PRESET (See Fig. 3-13.)

- 1) Load a cassette tape and set the FWD mode.
- 2) Confirm whether the distance between 3 part of the tension regulator arm 1 and the groove 3 of the chassis is 1.1 ± 0.3 mm. If this distance is not within the specified range, remove the cassette tape and perform the following adjustment.
- 3) Loosen the fixing screw 4 of the tension regulator band assembly 3.
- 4) Slide the tension regulator plate 5 in the direction of the arrow 3 if the measured distance is over the specified range, and in the direction of the arrow 3 if it is under that range. Then, fix it with the screw 4.
- 5) Repeat steps 1) and 2) and confirm that the distance is within the specified range.

Note: Use a cassette with the tape advanced halfway.

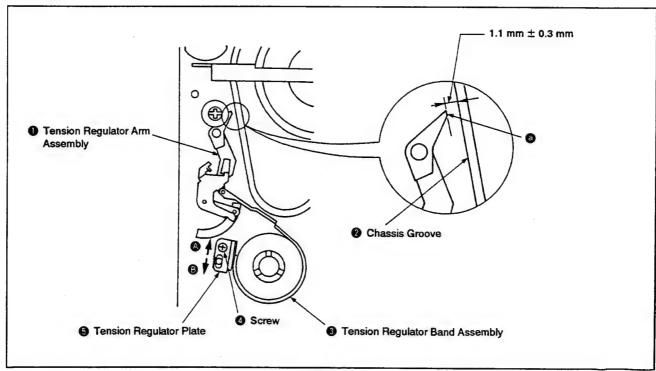


Fig. 3-13.

### 3-13. DRUM ASSEMBLY, DEW SENSOR

- 1. Removal (See Fig. 3-14.)
- 1) Set the EJECT mode.
- 2) Remove the flexible board 1 and the two connectors 2.
- Remove the guide guard assembly as described in section 3-2.
- Remove the screw 3, then remove the axle ground terminal 4.
- 5) Remove the three screws **5**, then remove the drum assembly **6** from the mechanism chassis.
- 6) Remove the connector (1)
- 7) Remove the screw 1, then remove the dew sensor 1.

Note: • When removing the drum assembly 6 from the mechanism chassis, take care not to cut the flexible board 1 or the harness.

• Take care not to touch the head tip (9).

- 2. Installation (See Fig. 3-14.)
- 1) Insert part (2) of the dew sensor (3) into the notch (11) of the mechanism chassis, then secure it with the screw (1).
- 2) Mount the connector 10.
- 3) Clamp the harness 19 of the dew sensor 19 with the reinforcing the claw 19 of the plate SS assembly (See Fig. A).
- 4) Insert the connector ② and the flexible board ① into the hole ② of the mechanism chassis, align the drum assembly ⑥ with the two dowels ③ and secure it with the three screws ⑤.
- 5) Align the axle ground terminal 2 with the two dowels 10 of the mechanism chassis and secure it with the screw 3.
- 6) Mount the guide guard assembly as described in section 3-2.
- 7) Mount the two connectors 2 and the flexible board 1.

Note: • Take care not to cut the flexible board ① or the harness ③.

- Take care not to touch the head tip (9).
- After assembling, be sure to perform Tape Path Adjustment following instructions in section 4.

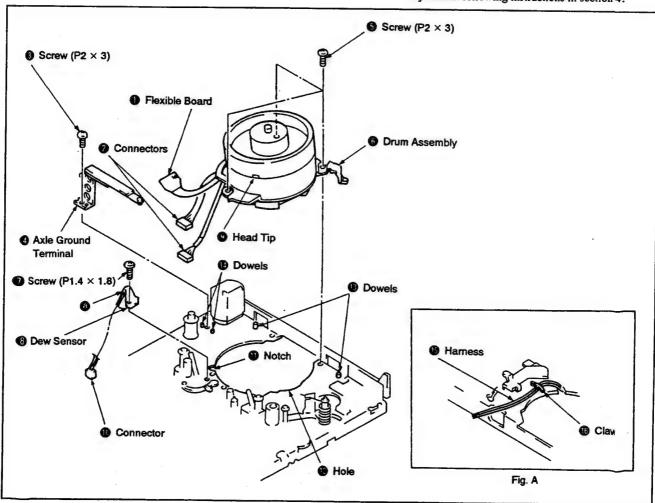


Fig. 3-14.

# 3-14. EJECT LEVER, SWITCH LEVER ASSEMBLY, PINCH ROLLER SUB ARM ASSEMBLY

- 1. Removal (See Fig. 3-15.)
- Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Set the STOP mode.
- 3) Remove the claw 1, then remove the eject lever 2.
- Remove the stopper washer 3, then remove the switch lever assembly 3.
- 5) Remove the pinch roller load spring 6.
- 6) Remove the stopper washer 6, then remove the pinch roller sub arm assembly 1.
- 2. Installation (See Fig. 3-15.)
- 1) Grease the axle (8 (See Fig. A).
- 2) Assemble by inserting a part of the pinch roller sub arm assembly into the slot , then insert the pin into the loading lever assembly notch .
- 3) Secure with the stopper washer 6.

- 4) Mount the pinch roller load spring **5** by catching its **6** end between the claw **7** and the chassis side and its **6** end to the claw **7**.
- 5) Apply half a drop of oil to the axle (See Fig. B).
- 6) Align the groove **(b)** of the switch lever assembly **(d)** with the mode detector switch protrusion **(d)**, mount it on the axle **(d)**, then insert the pin **(d)** into the drive gear (left) assembly **(d)** outer groove.
- 7) Secure with the stopper washer 3.
- 8) Mount the eject lever 2 and close the claw 1.
- Mount the DC motor (capstan motor) as described in section 3-3.

Note: When mounting the switch lever assembly 4 onto the axle 18 with the tension regulator arm assembly installed, set the pin 19 to the arrow 4 side of the switch lever assembly 4.

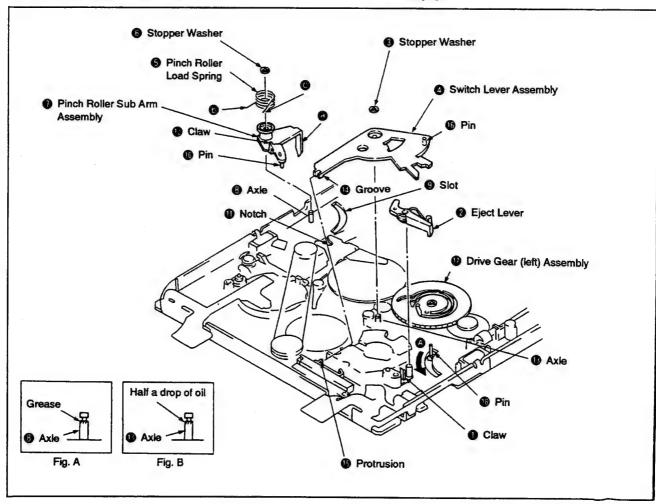


Fig. 3-15.

# 3-15. TIMING BELT (L), RC GEAR ASSEMBLY, LOADING LEVER ASSEMBLY, TIMING BELT (S), CONNECTING GEAR ASSEMBLY

#### 1. Removal (See Fig. 3-16.)

- Remove the DC motor (capstan motor) as described in section 3-3.
- Remove the pinch roller sub arm assembly as described in section 3-14.
- 3) Set the STOP mode.
- 4) Remove the stopper washer ①, then remove the RC gear assembly ② from the axle ④ with the timing belt (L) ③ attached.
- 5) Remove the timing belt (L) 3 from the idler pulley assembly 5.
- 6) Remove the stopper washer 6 and remove the loading lever assembly 8 while pushing the claw 7 in the direction of the arrow 6.
- 7) Turn the stopper **9** approx. 90 ° in the direction of the arrow **9**.
- 8) Remove the connecting gear assembly 10 from the axle 10 with the timing belt (S) 10 attached.
- 9) Remove the timing belt (S) 10 from the idler pulley assembly 5.

Note: When removing the connecting gear **1**, take care not touch the flange section **5**.

# 2. Installation (See Fig. 3-16.)

- 1) Apply half a drop of oil to the axle (6) (See Fig. F).
- 2) Hook one end of the timing belt (S) ① onto the connecting gear assembly ② and the other end onto gear ③ of the idler pulley assembly ⑤. (Refer to the figure.)
- 3) Mount the connecting gear assembly 10 with the timing belt (S) 10 attached to the axle 15.
- 4) Turn the stopper (9) in the direction of the arrow (9) as far as it will go.
- 5) Apply half a drop of oil to the axle (See Fig. A).
- 6) Fit the loading lever assembly 3 to the axle 7, secure the part with the claw 7 and place the pin 13 into the groove of the drive gear (right) assembly 10.
- 7) Install the stopper washer 6.
- 8) Place the timing belt (L) 3 around the gears of the RC gear assembly 2 indicated in Fig. B, and its opposite side around the gear 6 of the idler pulley assembly 5. (See Fig. E.)
- 9) Mount the RC gear assembly 2 onto the axle 4 with the timing belt (L) 3 attached, and engage it with the gear of the RK gear assembly 6.
- 10) Install the stopper washer 1.
- Grease parts of the loading lever assembly indicated in Fig. C.
- 12) Mount the pinch roller sub arm assembly as described in section 3-14.
- Mount the DC motor (capstan motor) as described in section 3-3.

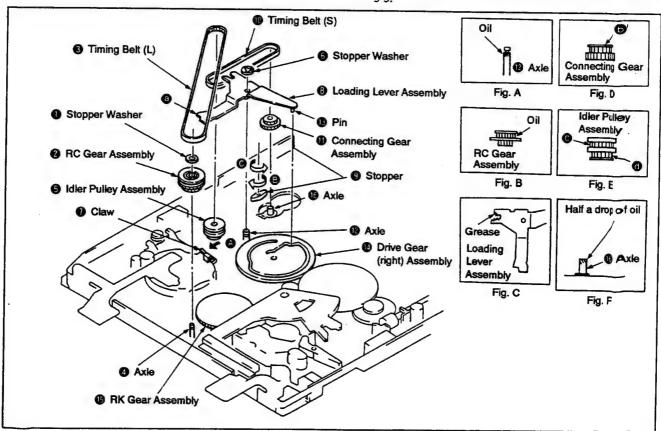


Fig. 3-16.

### 3-16. IDLER PULLEY, TS BRAKE ASSEMBLY, LB GEAR ASSEMBLY, RK GEAR ASSEMBLY

- 1. Removal (See Fig. 3-17.)
- Remove the DC motor (capstan motor) as described in section 3-3.
- Remove the switch lever assembly as described in section 3-14.
- Remove the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly described in section 3-15.
- 4) Set the STOP mode.
- 5) Remove the stopper washer **1**, then remove the idler pulley **2**.
- 6) Open the claw 3, then remove the TS brake assembly 4.
- 7) Remove the torsion coil spring (LB) 6.
- Remove the stopper washer 6, then remove the LB gear assembly 1.
- 9) Remove the RK gear assembly (3).

Note: When removing the idler pulley ②, take care not to touch the flange section ③. (See Fig. C.)

- 2. installation (See Fig. 3-17.)
- 1) Apply half a drop of oil to the axle (9 (See Fig. A).
- Mount the RK gear assembly onto the axle , keeping it in horizontal position.
- 3) Apply half a drop of oil to the axle (See Fig. B).
- 4) Mount the LB gear assembly 10 onto the axle 10 and secure it with the stopper washer 16.
- 5) Insert the torsion coil spring (LB) § into the axle ①, then hook it to the mechanism chassis notch ② and to the tab ③.
- 6) Mount the TS brake assembly 4 and close the claw 3.
- 7) Apply half a drop of oil to the axle (6) (See Fig. D).
- 8) Mount the idler pulley 2 onto the axle 6, then secure it with the stopper washer 1.
- 9) Mount the timing belt (L), the RC gear assembly, the loading lever assembly, the timing belt (S) and the connecting gear assembly as described in section 3-15.
- Mount the switch lever assembly as described in section 3-14.
- 11) Mount the DC motor (capstan motor) as described in section 3-3.

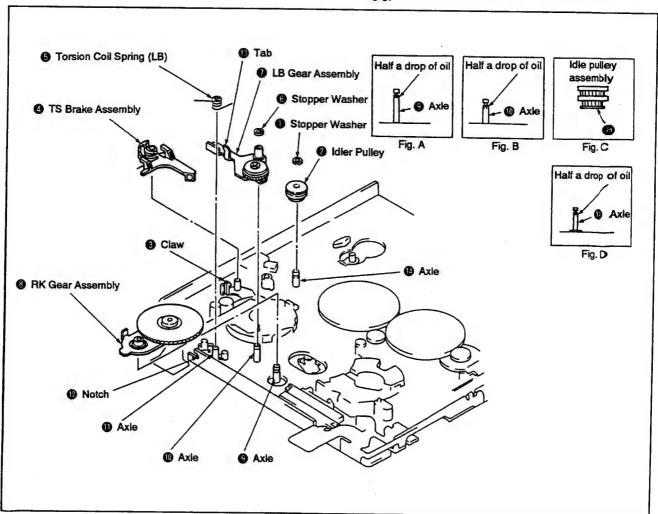


Fig. 3-17.

### 3-17. UL GEAR, UL BRAKE, UL ARM, LB PLATE SPRING

- 1. Removal (See Fig. 3-18.)
- Remove the switch lever assembly as described in section 3-14.
- 2) Remove the stopper washer **1**, then remove the UL gear **2**.
- 3) Remove the UL arm 3, the 1.6 mm-diameter poly washer 4 and the LB plate spring 5.
- 4) Remove the UL brake 6.

- 2. Installation (See Fig. 3-18.)
- 1) Mount the UL brake 6.
- 2) Apply half a drop of oil to the axle (See Fig. A).
- 3) Mount the LB plate spring 5 to the axle 1 as shown in Fig. B, then install the 1.6mm-diameter poly washer 4.
- 4) Mount the UL arm 3 to the axle 3 so that the protrusion 3 comes into the groove 3 of the UL brake 3.
- 5) Mount the UL gear 3 to the axle 3 and engage it with the gear of the drive gear (left) assembly 10.
- 6) Install the stopper washer 1.
- 7) Mount the switch lever assembly as described in section 3-14.

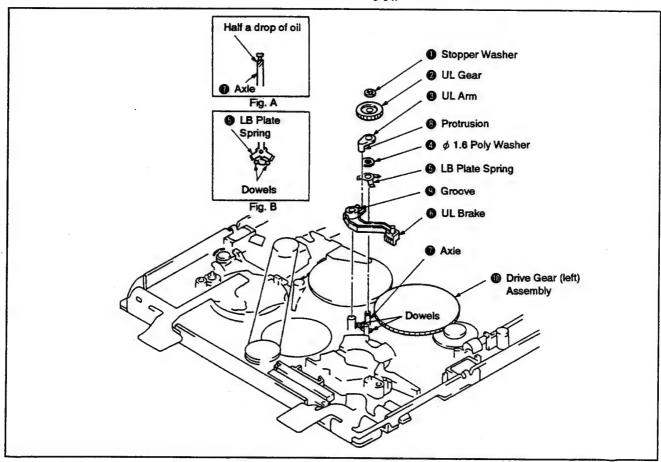


Fig. 3-18.

# 3-18. COASTER (RIGHT) ASSEMBLY, DRIVE GEAR (RIGHT) ASSEMBLY

# 1. Removal (See Fig. 3-19.)

- Remove the DC motor (capstan motor) as described in section 3-3.
- Remove the drum unit as described in section 3-13.
- Remove the switch lever assembly as described in section 3-14.
- Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 5) Set the STOP mode.
- 6) Remove the screw 1, then remove the coaster plate spring 2 and the coaster (right) assembly 3.
- 7) Remove the two screws **1**, then remove the reinforcing plate TT **1**.
- 8) Remove the stopper washer 1.5 (3), then remove the drive gear (right) assembly (1).

# 2. Installation (See Fig. 3-19.)

- 1) Grease the points of the mechanism chassis shown in Fig A.
- 2) Apply half a drop of oil to the axle 3 (See Fig. F).
- 3) Grease pin (9), axle (10) and dowel (20) of the coaster (right) assembly (3) (See Fig. D).
- 4) Mount by aligning the pin (1) and the axle (11) with the slot (11) of the mechanism chassis.
- 5) Move the brake release arm in the direction of the arrow to put it out of the way.

- 6) Mount the drive gear (right) assembly 1 to the axle 3, and engage it with the drive gear (left) assembly 1 as shown in Fig. B.
- 7) Align the 10 part with the 15 part, and the hole 10 with the pin 19 of the coaster (right) assembly 13.
- 8) Install the stopper washer 1.5 6.
- 9) Mount by aligning the coaster plate spring ② with the axle ① of the coaster (right) assembly ③ and pin ⑤, then secure with the screw ⑥.
- 10) Mount the reinforcing plate TT 3 aligning it with the dowel 3, then tighten the two screws 4 in the indicated order.
- 11) Grease the points indicated in Figs. C and E.
- 12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 13) Mount the switch lever assembly as described in section 3-14.
- 14) Mount the drum unit as described in section 3-13.
- 15) Mount the DC motor (capstan motor) as described in section 3-3.

Note: • Screw 1 should be tightened with a tightening torque of approx. 500g°cm. If tightened too much, the coaster (right) assembly 3 and the coaster plate spring 2 will be deformed.

 After installing, be sure to perform tape path adjustment as described in section 4.

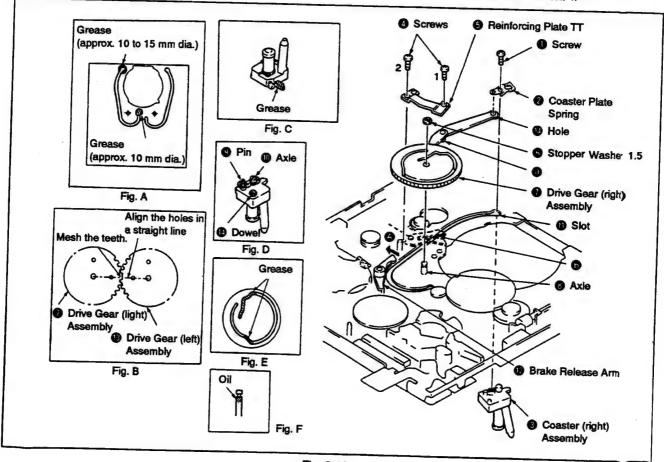


Fig. 3-19.

# 3-19. COASTER (LEFT) ASSEMBLY, DRIVE GEAR (LEFT) ASSEMBLY

#### 1. Removal (See Fig. 3-20.)

- Remove the DC motor (capstan motor) as described in section 3-3.
- 2) Remove the drum assembly as described in section 3-13.
- Remove the switch lever assembly and the pinch roller sub-arm assembly as described in section 3-14.
- 4) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- Remove the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
- Remove the screw 1, then remove the coaster plate springand the coaster (left) assembly 3.
- 7) Remove the two screws 4, then remove the reinforcing plate SS assembly 5.
- 8) Remove the stopper washer 1.5 6, then remove the drive gear (left) assembly 1.

#### 2. Installation (See Fig. 3-20.)

- 1) Grease the points of the mechanism chassis shown in Fig A.
- 2) Apply half a drop of oil to the axle (See Fig. E).
- 3) Grease pin (9), axle (10) and dowel (15) of the coaster (left) assembly (3) (See Fig. B).
- 4) Mount by aligning the pin ② and the axle ① with the slot ① of the mechanism chassis.
- 5) Fit the drive gear (left) assembly 1 to the axle 3, and mount so that the gear engages with the wheel gear 1 and the UL gear 1.

- 6) Align the 3 part with the slot 11, and the hole 12 with the pin 9 of the coaster (left) assembly 3.
- 7) Install the stopper washer 1.5 6.
- 8) Mount by aligning the coaster plate spring 2 with the axle 10 and pin 2 of the coaster (left) assembly 3, then secure with the screw 1.
- Mount the reinforcing plate SS assembly 3 aligning it with the dowel 3, then tighten the two screws 3 in the indicated order.
- 10) Grease points indicated in Figs. C and D.
- Mount the coaster (right) assembly and the drive gear (right)assembly as described in section 3-18.
- 12) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 13) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- 14) Mount the drum assembly as described in section 3-13.
- 15) Mount the DC motor (capstan motor) as described in section 3-3.

Note: • Screw 1 should be tightened with a tightening torque of approx. 500g cm. If tightened too much, the coaster (right) assembly 3 and the coaster plate spring 2 will be deformed.

 After installing, be sure to perform tape path adjustment as described in section 4.

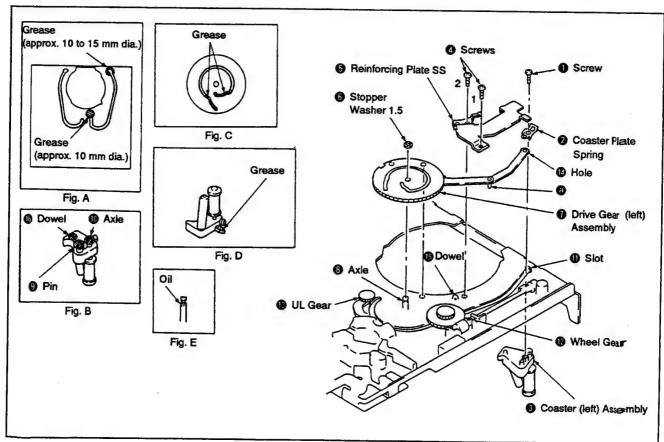


Fig. 3-20.

# 3-20. LOADING MOTOR, BRAKE RELEASE ARM, WHEEL GEAR, WORM ASSEMBLY

- 1. Removal (See Fig. 3-21.)
- Remove the DC motor (capstan motor) as described in section 3-3.
- Remove the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- 3) Remove the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- Remove the drive gear (right) assembly as described in section 3-18.
- Remove the drive gear (left) assembly as described in section 3-19.
- 6) Remove the two screws 1 , then remove the loading motor assembly 2.
- 7) Remove the brake release arm 3.
- Remove the stopper washer 4, then remove the wheel gear
   .
- 9) Remove the worm assembly 6 from the six claws 1.

- 2. Installation (See Fig. 3-21.)
- 1) Mount the worm assembly (6), matching it to the six claws
- 2) Grease the shaded parts of the worm assembly 6 (five places) (see Fig A).
- 3) Apply half a drop of oil to the axle (3) (See Fig. B).
- 4) Fit the wheel gear 6 to the axle 8 and engage it with the gear of the worm assembly 6.
- 5) Mount the brake release arm 3.
- Grease the whole perimeter of the gear of the loading motor assembly .
- 7) Align the loading motor assembly ② with the mechanism chassis and secure it with the two screws ②.
- 8) Mount the drive gear (left) assembly as described in section 3-19.
- Mount the drive gear (right) assembly as described in section 3-18.
- 10) Mount the timing belt (L), the RC gear assembly and the loading lever assembly as described in section 3-15.
- 11) Mount the switch lever assembly and the pinch roller sub arm assembly as described in section 3-14.
- Mount the DC motor (capstan motor) as described in section 3-3.

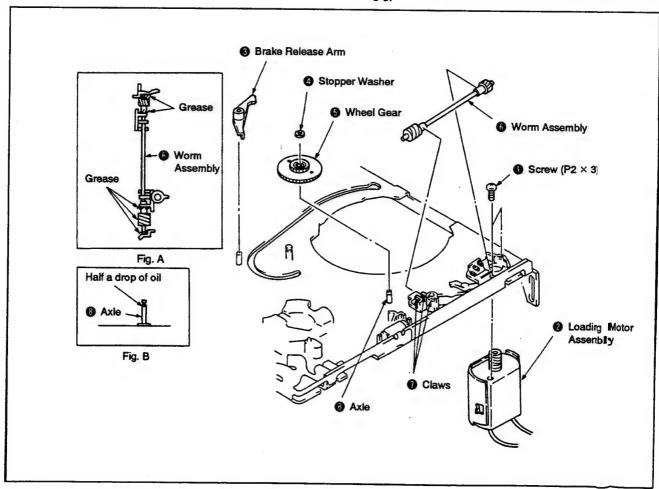


Fig. 3-21.

#### 3-21. ROTARY UPPER DRUM REPLACEMENT

#### 1. Removal

- If possible, make a recording before removal.
- Detach the six solderings , then use a pair of tweezers or
  the like to confirm that the terminals passing through the
  board holes from below can move freely.
- 2) Remove the two screws 1 (See Fig. 3-22).
- 3) Mount the jig 4 (Ref. No. J-7) with the two supplied screws 2, then screw the attached hexagon socket screws 3 to the jig 4. The rotary upper drum 5 will move upward and come off (See Fig. 3-23).

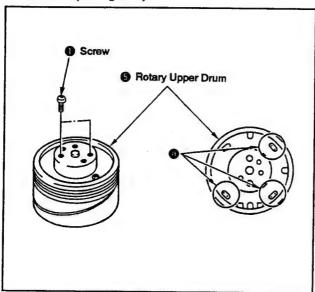


Fig. 3-22.

# 2. Installation

- Wipe clean the flange surface and the rotary upper drum surface that makes contact with it, and confirm that they are free from dirt and scratches.
- 2) Insert the jig ① (Ref. No. J-7) into the drum positioning hole, then set the rotary upper drum ⑤ by passing the jig through its positioning hole ⑥.
  - Note: Confirm that the terminals (3) protrude slightly from the rotary upper drum board holes (See Fig. 3-24).
- 3) Remove the jig 1 and push down the rotary upper drum 3 gently by hand. If it does not go all the way down, secure it temporarily by tightening the two hexagon socket screws 1 alternately.
- 4) Insert the jig 1 into the positioning hole 6 again and confirm that it goes in smoothly. If it does not, loosen the two screws 1, repeat step 3 of the Removal paragraph and restart the setting procedure.
- 5) Tighten the screws 1.
- 6) Solder the terminals (3) (3) in Fig. 3-22).

  Note: Take care that no solder flows below the board.

Note: After installing, be sure to perform tape path adjustment as described in section 4.

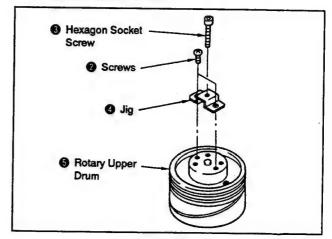


Fig. 3-23.

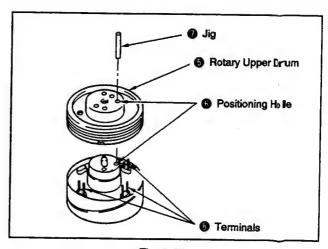


Fig. 3-24.

# 3-22. FWD BACK TENSION (See Fig. 3-25.)

- 1) Set the torque cassette (Ref. No. J-6).
- 2) Set the FWD mode and confirm that S reel table torque value is within 9 to 13 g cm.
- 3) If the torque value does not meet the specification, adjust the adjust arm ①.

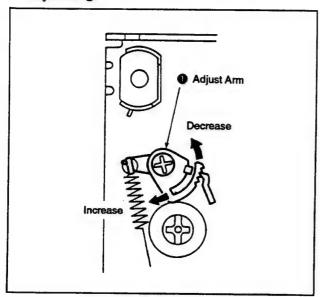


Fig. 3-25.

### 3-23. REEL TORQUE CHECK

- 1) Set the torque cassette.
- Set the FWD mode and confirm that T reel table torque value is within 7 to 15 g·cm.
- 3) Set the REV mode and confirm that S reel table torque value is within  $29 \pm 6$  g·cm.
- 4) Set the REV mode and confirm that T reel table torque value is within 13 to 25 g\*cm.
- 5) If a torque value does not meet the specifications above, replace the corresponding reel table.

### 4. TAPE PATH ADJUSTMENT

#### [The Track Shift Mode]

In the 8 mm video system, instantaneous tape speed control is performed using four kinds of pilot signals, and high-precision tracking is achieved through the ATF (Automatic Track Finding) system. This makes a tracking control knob unnecessary and allows for precise tracing.

On the other hand, however, tape path adjustment presents some difficulties when the ATF system is used. Namely, since the ATF system will automatically compensate to some degree for head tracing errors, thorough adjustment is not possible.

This can be solved by setting the track shift mode for tracking fine adjustment. ATF will be compulsorily activated, shifting the tracking amount by a fixed amount (approx. 1/4) and thus making tracking fine adjustment easy. Furthermore, no track shift jigs are required.

### 4-1. TRACK SHIFT MODE SETTING

#### [Setting Procedure]

 Connect the TEST A and TEST B terminals to the COM terminal.

Example:

NTSC ······ GV-8 PAL ····· GV-8E

Connect Pins ① and pin ③ of CN017 on the

SV-34 board (GV-8) sv-35 board (GV-8E) to pin ②

to pin 2 of it. (See Fig. 4-1)

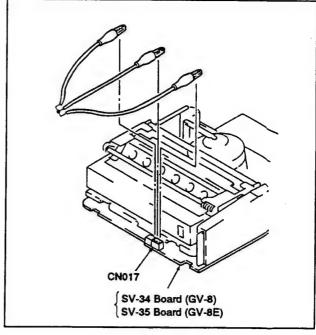
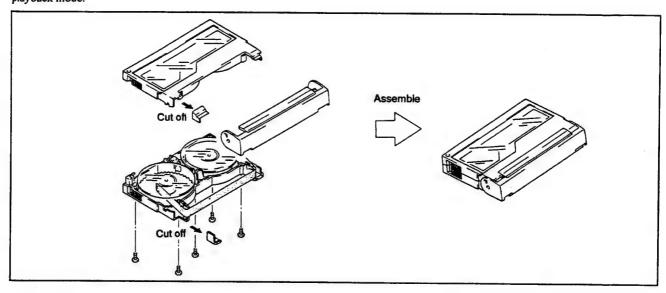


Fig. 4-1.

### [Note on Adjustment of No.7 Guide (TG-7)]

The height adjustment screw for No.7 guide (TG-7) is located at some distance from the guide (refer to Fig. 4-2). Therefore, when performing section 4-6. No.7 Guide (TG-7) Adjustment it is convenient to use the alignment tape for tracking (Ref. No. J-5), modified as follows, and perform adjustment in playback mode.



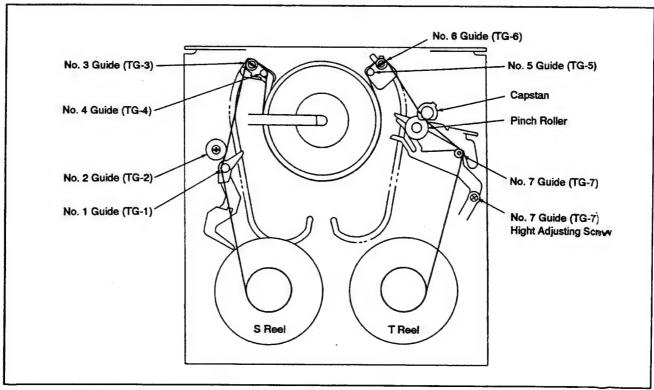


Fig. 4-2.

# 4-2. PREPARATIONS FOR ADJUSTMENT

- Clean tape path surfaces (tape guides, drum, capstan shaft, pinch roller) (See Fig. 4-2).
- Connection of oscilloscope and output method of waveform.
   CH 1: RF signal output of the drum head (V RF OUT)
   Method for signal output:

Short-circuit the external trigger output (RF SW. P) and GND.

Example:

NTSC ····· GV-8 PAL ····· GV-8E

CH 1: Pin 3 (V RF OUT) of CN018 on the

SV-34 board (GV-8)

SV-35 board (GV-8E)

Method for signal output:

Short-circuit pin (1) (GND) and pin (2) (RF SW.P)

of CN018 on the

SV-34 board (GV-8)

SV-35 board (GV-8E)

- Play back the alignment tape for tracking adjustment (Ref. No. J-5).
- 4) Confirm that both the entrance and exit side RF waveforms of the oscilloscope are flat (See Fig. 4-4). If they are not, adjust as follows.

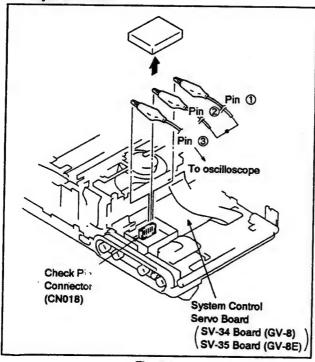
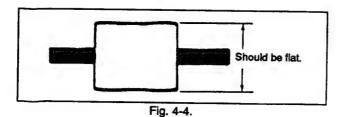


Fig. 4-3.



# 4-3. TRACKING ADJUSTMENT (See Fig. 4-5.)

- 1) Play back the alignment tape for tracking adjustment.
- 2) Pass a hexagonal wrench, screwdriver (Ref. No. J-11) or the like through the hole ①, loosen the lockscrew ② a little, then make the entrance side waveform flat by turning the No. 3 guide (TG-3) ③.
- 3) Pass a hexagonal wrench, screwdriver or the like through the hole 4, loosen the lockscrew 3 a little, then make the exit side waveform flat by turning the No. 6 guide (TG-6) 3.

Note: Take care not to loosen lockscrews too much, since guides come loose easily.

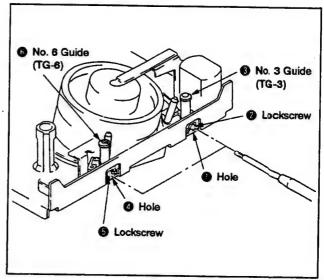


Fig. 4-5.

# 4-4. TRACKING FINE ADJUSTMENT (See Figs. 4-5. and 4-6.)

- Play back the alignment tape for tracking adjustment and set the track shift mode.
- Confirm whether the waveform is flat. If it is not, turn the No. 3 (TG-3) and No. 6 (TG-6) guides so that it becomes flat.
- 3) Fix the No. 3 guide 3 by tightening its lockscrew 3. Then confirm that the entrance side waveform has not changed.
- 4) Fix the No. 6 guide 6 by tightening its lockscrew 6. Then confirm that the exit side waveform has not changed.

Note: The set screws ② and ⑤ should be tightened with a tightening torgue of approx. 200g cm ± 10%.

If tightened too much, there is danger of damaging the thread.

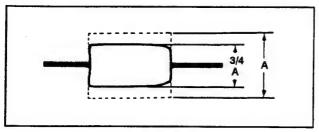


Fig. 4-6.

# 4-5. No. 2 GUIDE (TG-2) ADJUSTMENT

When the No. 2 guide has been turned or replaced, perform height presetting before this adjustment.

# 4-5-1. No. 2 Guide (TG-2) Height Presetting (See Fig. 4-7.)

 Adjust the height from the mechanism chassis upper surface to the TG-2 upper flange upper surface to 18.6 mm by rotating the TG-2 upper flange .

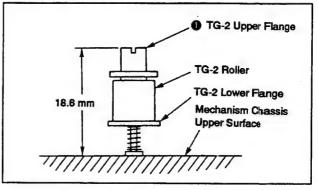


Fig. 4-7.

#### [Reference]

This U mechanism is equipped with four adjustable guides (TG-2, 3, 6 and 7). To raise or lower the respective guide rotate the corresponding adjustment screw as shown below.

Guide	Guide adjustment	Rotating direction of adjustment screw	
TG-2, 3, 6	Raise	Counterclockwise	
10-2, 3, 6	Lower	Clockwise	
TG-7	Raise	Counterclockwise	
10-7	Lower	Clockwise	

# 4-5-2. No. 2 Guide (TG-2) Adjustment (See Figs. 4-8. and 4-9.)

- Play back a thin tape like the P6-120MP, etc. and set the REV mode.
- 2) Confirm that the tape is not bent at the lower flange 2 of the No. 2 guide (TG-2) 1 (See Fig. 4-8). If it is, turn the upper flange 3 of the No. 2 guide (TG-2) 1 clockwise with a screwdriver, lowering it until the tape is straightened.
- 3) Play back the alignment tape for tracking adjustment.
- Perform tracking adjustment and tracking fine adjustment as described in sections 4-3. and 4-4.
- 5) In the track shift mode, CUE/REV the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds.
- 6) If the waveform is not normal (See Fig. 4-9), turn the upper flange 3 of the No. 2 guide (TG-2) 1 90° counter-clockwise and repeat step 5.
  - Repeat steps 5 and 6 until a normal waveform is obtained. Then, confirm that the tracking waveform has not changed. If it has, perform fine adjustment of entrance side tracking and repeat step 5.

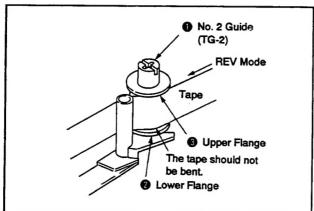


Fig. 4-8.

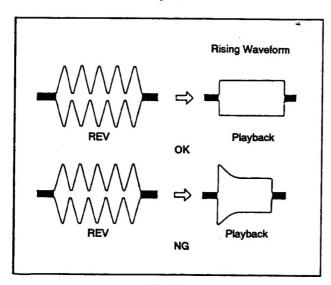


Fig. 4-9.

# 4-6. No. 7 GUIDE (TG-7) ADJUSTMENT (See Fig. 4-10.)

- Play back the alignment tape for tracking adjustment and set the REV mode.
- 2) Confirm that the tape is not bent between the No. 6 guide (TG-6) and the capstan . If it is, turn the hight adjusting screw of the No. 7 guide (TG-7) until the tape is straightened.
- 3) Set the playback mode again and confirm that the tape is not bent between the capstan and the hight adjusting screw for the No. 7 guide (specification:0.5 mm or less). If the tape is bent beyond the specification, turn the No. 7 guide (TG-7) until bending is within the specification (0.5 mm). If in the REV mode tape bending between the No. 6 guide (TG-6) and the capstan is 0.3 mm or less, adjustment

can be considered completed.

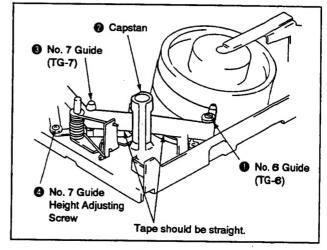


Fig. 4-10.

# 4-7. CUE AND REV WAVEFORM CHECK (See Fig. 4-11.)

- Play back the alignment tape for tracking adjustment and set the REV mode. Confirm that waveform peaks maintain a constant pitch of 5 seconds or more (See Fig. 4-11). In case pitch is not constant, perform section 4-4. Tracking Fine Adjustment and section 4-6. No. 7 Guide Adjustment.
- Set the CUE mode. Confirm that waveform peaks still maintain a constant pitch of 5 seconds or more (See Fig. 4-11). Otherwise, perform section 4-4. Tracking Fine Adjustment.

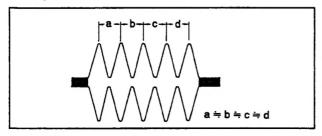


Fig. 4-11.

#### 4-8. CHECK AFTER ADJUSTMENT

### 4-8-1. Tracking Check

- 1) Confirm that the amplitude of RF waveform is reduced to approx. 3/4 when the track shift mode is set (See Fig. 4-12).
- Then, confirm that the minimum amplitude value (EMIN) is 65% of the maximum value (EMAX) or larger (See Fig. 4-13).
- Confirm that no large fluctuations occur on the waveform (See Fig. 4-14).

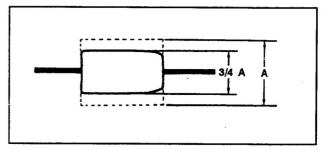


Fig. 4-12.

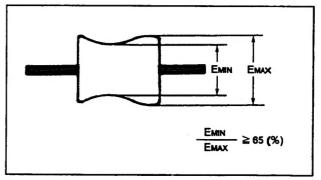


Fig. 4-13.

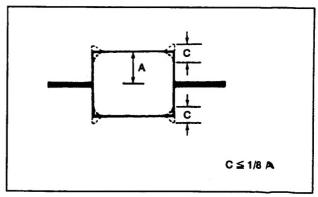


Fig. 4-14.

# 4-8-2. Rising Check (See Fig. 4-15.)

- 1) Play back the alignment tape for tracking adjustment.
- 2) Cancel the track shift mode.
- 3) Eject the tape, then load it again.
- 4) Set the playback mode and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller (See Fig. 4-15).
- 5) CUE/REV and FF/REW the tape, then play it back and confirm that the RF waveform rises flat within 2 seconds. Also confirm that the tape is not bent around the pinch roller.
- 6) Repeat steps 3) to 5) once more.

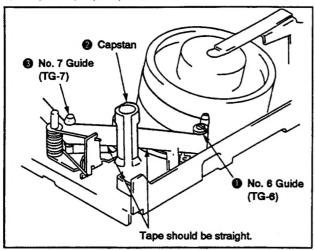


Fig. 4-15.

#### 4-8-3. Tape Path Check (See Fig. 4-16.)

- Play back a thin tape like the P6-120MP (NTSC) or P5-90MP (PAL), etc. and confirm that no tape rising occurs, and that curling is less than 0.3 mm, at the lower flange of the No. 2 guide, the upper flange of the No. 3 guide, the upper flange of the No. 6 guide and the No. 7 guide upper and lower flanges.
- 2) Confirm that no tape rising occurs and that curling is less than 0.3 mm at the flanges of all guide when pressing the FF button in the playback mode to set the CUE mode, or the REW button to set the REV mode.

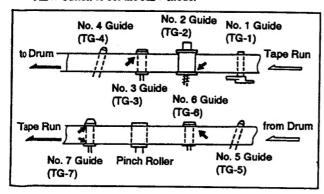


Fig. 4-16.

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